

# **Developer's Toolkit Release Notes for HP-UX 11i**



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# Contents

## 1. Announcements

Product .....	8
Audio Server .....	8
xterm Superseded by dtterm .....	8
VueHelp Libraries Removed .....	8
Digital Video DevKit Removed .....	9
Technical Print Service Components .....	9
Obsolete Functions .....	9
Changes in Keyboard Functionality .....	10
Rendering International Characters .....	10

## 2. What's In This Version

Features .....	14
11i Features and Updates .....	15
Libraries for Motif and the X Window System Development .....	15
X11 R6.2 .....	15
Motif 2.1 .....	15
Thread Safe Libraries .....	16
CDE 2.1 Development Environment .....	16
Filesets .....	17
Documentation .....	17
HP Instant Information CD-ROM .....	17
Widget Writer Changes from Motif 1.2 to 2.1 .....	18
Notes for Other Components .....	63
X11R6 Athena Widget Set .....	63
Imake Configuration Tool .....	63
Technical Print Service .....	63
X Print Extension Library .....	64
Print Dialog GUI .....	64
Print Dialog Manager .....	64
Localizing Applications that use DtPrintSetupBox .....	64
Documentation .....	65

---

## Contents

<b>3. Known Problems and Bugs</b>	
CDE Threads and Signal Handling .....	68
CDE Hostname Character Length .....	69
Man Page Filename Truncation .....	70
Help System XPM Graphics .....	71
Application Conflicts With DtHelp Searches .....	72
10.20 to 11i Update .....	73
<b>4. Compatibility Information and Installation Requirements</b>	
Installation .....	76
CDE Developer's Toolkit Update .....	76
Linking Mixed Shared and Archived Libraries .....	77
Dynamic Loading of Versioned Libraries .....	78
X11 Release 6 libXt Dependencies .....	79
<b>5. What's Fixed in this Version</b>	
Patch Releases .....	82
<b>6. Questions and Answers</b>	
<b>7. What Manuals are Available for This Version</b>	
Developer's Toolkit Documentation .....	86
<b>8. Software Availability in Native Languages</b>	

# **1            Announcements**

## **Product**

This is a revision of the Developer's Toolkit for HP-UX 11i.

### **Audio Server**

With 11i, the audio server and the audio library use DCE to communicate with each other. This change is transparent to audio clients due to the use of shared libraries. Audio clients built on 10.\* systems using the audio shared library will work on 11i systems, though they will now be using DCE instead of NCS. The 11i audio server will be able to communicate with DCE and NCS audio clients on other systems. However, DCE clients on 11i will not be able to connect to NCS audio servers on 10.\* systems.

### **xterm Superseded by dtterm**

This release of HP-UX includes both the X11 Release 5 and Release 6 versions of xterm, delivered in the following directories as unsupported software:

- R5: /usr/bin/X11/xterm
- R6: /usr/contrib/bin/X11/xterm

The functionality of xterm is superseded by the industry-standard dtterm terminal emulator, making xterm redundant. The Release 5 version of xterm will not be shipped with the next release of HP-UX; it is being provided with this release to facilitate the transition of users from xterm to dtterm.

### **VueHelp Libraries Removed**

The HP VUE Help Developer's Kit was removed from the HP-UX 10.30 Developer's Toolkit. The VueHelp library (`libXvh`) is supported only for use with the X11 Release 5 development environment.

Application developers using VueHelp will need to port their applications to utilize the industry-standard CDE Help API, `libDtHelp`, which is supported for use with both Release 5 and Release 6 of the X11 development environment.

## **Digital Video DevKit Removed**

The HP Digital Video DevKit product has been removed from the HP-UX Developer's Toolkit (11.0 onwards).

## **Technical Print Service Components**

The components delivered as part of the Technical Print Service are distributed in the filesets for X, Motif, and CDE.

## **Obsolete Functions**

XHP functions for internationalized keyboard input have been removed. These HP proprietary functions are no longer needed since X11R5 and R6 provide public, standard APIs that provide equivalent functionality. Specifically, the following functions have been removed:

- XHPConvertLookup()
- XHPGetEurasianCvt()
- XHPInputChinese\_s()
- XHPInputChinese\_t()
- XHPInputJapanese()
- XHPInputKorean()
- XHPInputRoman8()
- XHPInputISO7sub()
- XHPNlioctl()

Instead, applications should use the following X11R6 routines:

- XOpenIM()
- XCloseIM()
- XGetIMValues()
- XCreateIC()
- XDestroyIC()
- XSetICFocus()
- XUnsetICFocus()

## Announcements

### Product

- `XmbResetIC()`
- `XIMOfIC()`
- `XSetICValues()`
- `XGetICValues()`

The new X11R6 functionality gives applications greater control and more flexibility than the HP proprietary functions.

### Changes in Keyboard Functionality

`XHPSetKeyboardMapping()` and two related functions, `XHPRefreshKeyboardMapping()` and `XHPSetKbdMapInit()`, are obsolete. These functions were used to change an application's local copy of the keymap in order to emulate a particular national language keyboard. These functions only worked for HP HIL keyboards. Although the functionality has been removed, stub APIs are provided so that older applications may still compile.

In HP-UX 9.\*, many applications (such as `vuepad` and `hpterm`) use `XHPSetKeyboardMapping()` to set the keyboard language by passing the value of the `KBD_LANG` environment variable. As of 10.0, HP VUE no longer sets the `KBD_LANG` environment variable. Clients and libraries have removed the call to `XHPSetKeyboardMapping()` since its behavior is not reliable in a mixed DIN and HIL keyboard environment.

### Rendering International Characters

In X11R3 and X11R4, support for rendering Asian characters was done through a proprietary mechanism called the associate font mechanism. In HP-UX 9.\*, rendering of Asian character data requires that two fonts be opened to correctly render all Asian characters. When an Asian font was opened with `XLoadFont()` or `XLoadQueryFont()`, the font was checked for the existence of an associate font property. If this property existed, an additional font was opened and maintained transparent to the application. All calls to calculate metrics or to perform rendering with the font caused the implementation to also use the associate font when present.

With support for 3-byte EUC and 4-byte EUC with HP-UX 10.0, rendering Asian character data often requires that more than two fonts be opened and used when rendering Asian character data. The old associate font mechanism could not be reliably expanded to handle these

cases. In addition, X11R5 and Motif 1.2 provide alternate, standard mechanisms for rendering internationalized text data. The associated font mechanism won't be supported on future releases of X11R5 and not at all in X11R6.

Applications directly calling the X library to render international text should replace their calculation of font metrics and their calls to `XDraw*`, `XLoadFont()`, and `XLoadQueryFont()` with the following:

- `XCreateFontSet()`
- `XExtentsOfFontSet()`
- `XmbDrawString()`, `XwcDrawString()`
- `XmbDrawImageString()`, `XwcDrawImageString()`
- `XmbDrawText()`, `XwcDrawText()`
- `XmbTextEscapement()`, `XwcTextEscapement()`
- `XmbTextExtents()`, `XwcTextExtents()`
- `XmbTextPerCharExtents()`, `XwcTextPerCharExtents()`

Applications and users that set Motif `fontList` resources to obtain internationalized text data should modify those font resources to specify font sets. As of Motif 1.2, a `fontList` resource can contain any combination of font structs and font sets. A font set is specified in a `fontList` resource by adding a ":" to the end of the `fontList` entry. For a font set, a `fontList` entry can be one or more ";" separated base names. A base name is either a font name (such as `jpn.8x18`) or an X Logical Font Description (XLFD). A typical `fontList` setting for Japanese might be:

```
app_name*Text.fontList: *-mincho*-18-*
```

The ":" character at the end of the `fontList` resource specification is mandatory to use font set technology.

For Motif to use font sets correctly in an application, either `setlocale()` or `XtSetLanguageProc()` must be called prior to initializing the toolkit.

Announcements  
**Product**

## **2                    What's In This Version**

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## **Features**

The HP-UX Developer's Kit provides information needed to develop applications using the following technologies on HP-UX 11i systems.

- OSF/Motif 2.1
- X11 R6.2 Xlib
- X11 R6.2 Xt Intrinsic
- X11 R6.2 Athena Widget Set
- Imake
- Common Desktop Environment 2.1
- Audio
- Imaging

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**NOTE**

*The HP-UX 11i operating system contains the X11 R5 runtime libraries allowing applications built with earlier versions to execute correctly.*

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## **11i Features and Updates**

The Developer's Toolkit includes these new components:

- X11 R6.2
- Motif 2.1
- Thread-safe Libraries
- Common Desktop Environment 2.1
- HP Instant Information online documentation
- Widget Writer changes from Motif 1.2 to 2.1

### **Libraries for Motif and the X Window System Development**

The default X Window System development environment for this release of HP-UX is X11 Release 6.2 and Motif 2.1.

#### **X11 R6.2**

The Developer's Toolkit provides 32 bit and 64 bit Archive and Shared libraries for X11 R6.2. Major changes from release R6.1 include:

- Addition of the Print Extension
- Vertical Writing Enhancements

#### **Motif 2.1**

The Developer's Toolkit provides 32 bit and 64 bit Archive and Shared libraries for developing Motif 2.1 applications. New features include:

- XmNotebook, XmContainer, XmIconGadget, XmComboBox, XmSpinBox, and XmScale widgets
- X Print Server support
- Manager and primitive widget subclassing
- Internationalization enhancements for vertical text

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**NOTE**

A variety of documentation for the X11 Window System and Motif 2.1 is available from The Open Group. Use the following URL to access their Web site:

<http://www.opengroup.org/desktop/>

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## **Thread Safe Libraries**

Toolkit libraries are thread safe with two exceptions — the Audio and the Imaging libraries — which remain thread-restricted. For these libraries, library entry points may be safely called by only a single thread of a multi-threaded application.

## **CDE 2.1 Development Environment**

The Developer's Toolkit provides six libraries that allow you to create applications for the Common Desktop Environment. Each library contains several components:

- **Desktop Services Library - libDtSvc**
  - Desktop Initialization API (DtInitialize)
  - Action Invocation API (DtAction)
  - Data Typing API (DtDts)
  - Drag and Drop API (DtDnd)
  - Screen Saver API (DtSaver)
  - Session Management API (DtSession)
  - Workspace Management API (DtWsm)
- **Help Widget Library - libDtHelp**
  - Help Utility API (DtHelp)
  - HelpDialog Widget API (DtHelpDialog)
  - HelpQuickDialog Widget API (DtHelpQuickD)
- **Terminal Widget Library - libDtTerm**
  - Terminal Widget API (DtTerm)

- **Desktop Widget Library - libDtWidget**
  - Editor Widget API (DtEditor)
  - ComboBox Widget API (DtComboBox)
  - MenuButton Widget API (DtMenuButton)
  - SpinBox Widget API (DtSpinBox)
- **Calendar Library - libcsa**
  - Calendar API (csa)
- **ToolTalk Messaging Library - libtt**
  - ToolTalk Toolkit API (ttdt, tttk)
  - ToolTalk Messaging API (tt)
- **Print Widget Library - libDtPrint**
  - Print Widget API

### **Filesets**

The CDE development environment consists of five filesets:

- CDE-DEMOS (example programs)
- CDE-INC (header files)
- CDE-HELP-PRG (example program and sample files)
- CDE-MAN-DEV (man pages)
- CDE-PRG (archive libraries)

### **Documentation**

The Common Desktop Environment man pages reside in `/usr/dt/man`. CDE application developer's documentation is available on the HP Instant Information CD-ROM. Refer to the *CDE Programmer's Overview* for instructions to set the `MANPATH` environment variable.

### **HP Instant Information CD-ROM**

HP-UX Developer's Toolkit documentation is provided on the HP Instant Information CD-ROM. The CD-ROM is organized into book collections, one of which is the Developer's Toolkit. This includes documentation for

What's In This Version  
**11i Features and Updates**

Motif 2.1, CDE 2.1 and multimedia components. For a list of available titles, refer to Chapter 7 , “What Manuals are Available for This Version.”

The part number of the CD-ROM is 50726-10314.

### **Widget Writer Changes from Motif 1.2 to 2.1**

The following list describes changes between Motif 1.2.6 and Motif 2.1.

1. The `_NO_PROTO` prototypes have been removed.
2. `AtomMgr.h`

The following functions have been replaced by macros:

```
XmInternAtom()  
XmGetAtomName()
```

Thus, it is conceivable that a pre-11i binary may require an entry point in a library for these two functions.

3. `BaseClassP.h`

These fields have been added to the `XmWrapperDataRec` structure:

```
int           initializeLeafCount;  
int           setValuesLeafCount;  
int           getValuesLeafCount;  
XtInitProc   constraintInitializeLeaf;  
XtSetValuesFunc constraintSetValuesLeaf;  
int          constraintInitializeLeafCount;  
int          constraintSetValuesLeafCount;
```

This also affects the `XmWrapperData` type.

The following functions have been removed:

`_XmIsSlowSubclass()`  
`_XmGetClassExtensionPtr()`  
`_XmPushWidgetExtData()`  
`_XmPopWidgetExtData()`  
`_XmGetWidgetExtData()`  
`_XmFreeWidgetExtData()`  
`_XmBaseClassPartInitialize()`  
`_XmInitializeExtensions()`  
`_XmIsStandardMotifWidgetClass()`  
`_XmSecondaryResourceData()`  
`_XmTransformSubResources()`

4. `BulletinBP.h`

The following field has been removed from the `XmBulletinBoardPar` struct:

`losing_focus_callback`

The following functions have been removed:

`_XmBB_CreateButtonG()`  
`_XmBB_CreateLabelG()`  
`_XmBulletinBoardSizeUpdate()`  
`_XmBulletinBoardFocusMoved()`  
`_XmBulletinBoardReturn()`  
`_XmBulletinBoardCancel()`  
`_XmBulletinBoardMap()`  
`_XmBulletinBoardSetDefaultShadow()`  
`_XmBulletinBoardSetDynDefaultButton()`  
`_XmBBUpdateDynDefaultButton()`

5. `CacheP.h`

The following functions have been removed:

`_XmCacheDelete()`  
`_XmCacheCopy()`  
`_XmCachePart()`

6. `CascadeBGP.h`

What's In This Version

## 11i Features and Updates

These fields have been added to the  
XmCascadeButtonGCacheObjPart structure:

```
GC arm_gc;  
GC background_gc;
```

The following functions have been removed:

```
_XmArrowPixmapCacheCompare()  
_XmArrowPixmapCacheDelete()  
_XmCreateArrowPixmaps()
```

### 7. CascadeBGP.h

These fields have been added to the  
XmCascadeButtonGCacheObjPart structure:

```
GC arm_gc;  
GC background_gc;
```

The following functions have been removed:

```
_XmCBHelp()  
_XmCascadingPopup()
```

### 8. ColorObj.h

This file has been removed.

### 9. ColorObjP.h

The ColorObjPart structure name has changed to XmColorObjPart.

The ColorObjRec structure name has changed to XmColorObjRec.

The ColorObjClassPart structure name has changed to  
XmColorObjClassPart.

The ColorObjClassRec structure name has changed to  
XmColorObjClassRec.

The following functions have been removed:

`_XmColorObjCreate()`  
`_XmGetPixelData()`  
`_XmGetIconControlInfo()` replaced by  
`XmeGetIconControlInfo()`  
`_XmUseColorObj()` replaced by `XmeUseColorObj()`

#### 10. `CommandP.h`

The following functions have been removed:

`_XmCommandReturn()`  
`_XmCommandUpOrDown()`

#### 11. `CutPaste.h`

These defines:

```
#define XmClipboardFail    0
#define XmClipboardSuccess 1
#define XmClipboardTruncate 2
#define XmClipboardLocked 4
#define XmClipboardBadFormat 5
#define XmClipboardNoData 6
```

have been replaced by this enumerated type:

```
typedef enum {
    XmClipboardFail = 0,
    XmClipboardSuccess = 1,
    XmClipboardTruncate = 2,
    XmClipboardLocked = 4,
    XmClipboardBadFormat = 5,
    XmClipboardNoData = 6
} XmClipboardStatus;
```

#### 12. `DesktopP.h`

The following functions have been removed:

`_XmGetActualClass()`  
`_XmSetActualClass()`

#### 13. `DisplayP.h`

What's In This Version

## 11i Features and Updates

The following fields have been added to the XmDisplayPart structure

XtPointer	user_data;
int	motif_version ;
XtEnum	enable_warp ;
Cardinal	num_bindings;
XtCallbackList	dragStartCallback;
XtCallbackList	noFontCallback;
XtCallbackList	noRenditionCallback;
Boolean	displayHasShapeExtension;
XtEnum	enable_btn1_transfer ;
Boolean	enable_button_tab ;
Boolean	enable_etched_in_menu;
Boolean	default_button_emphasis;
Boolean	enable_toggle_color;
Boolean	enable_toggle_visual;
Boolean	enable_drag_icon;
Boolean	enable_unselectable_drag;
Boolean	enable_thin_thickness;
Boolean	enable_multi_key_bindings;

The following fields have been added to the XmDisplayInfo structure:

```
XmExcludedParentPaneRec excParentPane; /* TearOff.c */
unsigned short resetFocusFlag; /* TravAct.c */
Boolean traversal_in_progress; /* Traversal.c *
```

The following functions have been moved to DisplayL.h:

```
_XmGetDropSiteManagerObject()
_XmGetDragProtocolStyle()
_XmGetDragTrackingMode()
_XmGetDragContextFromHandle()
_XmGetXmDisplayClass()
_XmSetXmDisplayClass()
```

### 14. DragCP.h

The following fields have been added to the XmDragContextPart :

```
long SaveEventMask;
```

The following functions have been moved to DragCI.h:

`_XmAllocReceiverInfo()`  
`_XmGetActiveProtocolStyle()`

The following macros have been removed:

`_XmDragStart()`  
`_XmDragCancel()`

#### 15. `DragIconP.h`

The following functions have been moved to `DragIconI.h`:

`_XmDestroyDefaultDragIcon()`  
`_XmDragIconIsDirty()`  
`_XmDragIconClean()`  
`_XmGetTextualDragIcon()`

#### 16. `DragOverSP.h`

The following fields have been added to the `XmDragOverShellPart` structure:

Boolean	<code>installColormap;</code>
Boolean	<code>holePunched;</code>
Widget	<code>colormapWidget;</code>
Widget	<code>colormapShell;</code>
Boolean	<code>colormapOverride;</code>
Colormap*	<code>savedColormaps;</code>
int	<code>numSavedColormaps;</code>

#### 17. `DrawP.h`

The following functions have been renamed:

from:	to:
<code>_XmDrawShadows()</code>	<code>XmeDrawShadows()</code>
<code>_XmClearBorder()</code>	<code>XmeClearBorder()</code>
<code>_XmDrawSeparator()</code>	<code>XmeDrawSeparator()</code>
<code>_XmDrawDiamond()</code>	<code>XmeDrawDiamond()</code>
<code>_XmDrawHighlight()</code>	<code>XmeDrawHighlight()</code>
<code>_XmDrawArrow()</code>	<code>XmeDrawArrow()</code>

What's In This Version

## 11i Features and Updates

The following function has been replaced by a macro that defines it as `XmeDrawHighlight`.

```
_XmDrawSimpleHighlight()
```

The `XmeDrawHighlight()` function has one less parameter than its predecessor, `_XmDrawHighlight()`.

```
int line_style
```

### 18. DrawingAP.h

The following function has been moved to `DrawingAI.h`

```
_XmDrawingAreaInput()
```

The following fields have been added to the `XmDrawingAreaPart` structure:

```
XtCallbackList    convert_callback;  
XtCallbackList    destination_callback;
```

### 19. DropSMgr.h

The following enumerated type has changed by the addition of `XmDROP_SITE_IGNORE`.

```
enum { XmDROP_SITE_ACTIVE, XmDROP_SITE_INACTIVE,  
XmDROP_SITE_IGNORE };
```

### 20. DropSMgrP.h

The following functions have been moved to `DropSMgrI.h`:

```
_XmDSMUpdate()  
_XmDSMGetTreeFromDSM()  
_XmDropSiteShell()  
_XmDropSiteWrapperCandidate()  
_XmGetActiveDropSite()  
_XmSyncDropSiteTree()  
_XmIEndUpdate()
```

### 21. ExtObjectP.h

The following defines have been removed:

```
#define XmNUM_ELEMENTS 4  
#define XmNUM_BYTES 99
```

## 22. FileSBP.h

The following define has changed value:

```
#define XmFSB_MAX_WIDGETS_VERT 12 (was 10)
```

The following fields have been added to the `XmFileSelectionBoxPart` structure:

```
XtEnum    path_mode ;  
XtEnum    file_filter_style ;  
Widget    dir_text ;  
Widget    dir_text_label ;  
XmString  dir_text_label_string ;  
time_t    prev_dir_modtime;
```

## 23. GMUtilsI.h

The `_XmGMReplyToQueryGeometry()` function has been moved to `XmP.h` and renamed:

```
XmReplyToQueryGeometry()
```

## 24. GadgetP.h

The following define has changed value:

```
#define XmGadgetClassExtVersion 2L (was 1L)
```

The following fields have been added to the `XmGadgetClassExtRec` structure:

```
XmWidgetMarginsProc widget_margins;
```

The following fields have been added to the `XmGadgetPart` structure:

```
XmDirection layout_direction;
```

The following function has been removed:

What's In This Version

## 11i Features and Updates

`_XmBuildGadgetResources()`

### 25. IconFileP.h

The following defines have been removed:

```
#define MATCH_CHAR 'P'
```

The following function has been removed:

```
_XmOSGenerateMaskName()
```

### 26. IconG.h

The following defines have been removed:

```
#define XmNborderType "borderType"
#define XmCborderType "BorderType"
#define XmRborderType "BorderType"
#define XmNimageName "imageName"
#define XmNpixmapForeground "pixmapForeground"
#define XmNpixmapBackground "pixmapBackground"
#define XmNunderline "underline"
#define XmCunderline "Underline"
#define XmNbehavior "behavior"
#define XmCbehavior "Behavior"
#define XmRbehavior "Behavior"
#define XmNpixmapPosition "pixmapPosition"
#define XmCPixmapPosition "PixmapPosition"
#define XmRPixmapPosition "PixmapPosition"
#define XmNstringPosition "stringPosition"
#define XmCstringPosition "StringPosition"
#define XmNfillMode "fillMode"
#define XmCfillMode "FillMode"
#define XmRfillMode "FillMode"
#define XmCR_SELECT XmCR_SINGLE_SELECT
#define XmCR_DROP 50
#define XmCR_POPUP 51
```

```
#define XmCR_HIGHLIGHT 52
#define XmCR_UNHIGHLIGHT 53
#define XmCR_SHADOW 54
#define XmPIXMAP_RECT 0x01
#define XmLABEL_RECT 0x02
```

The following types have been removed:

```
enum { XmPIXMAP_TOP, XmPIXMAP_BOTTOM,
XmPIXMAP_LEFT, XmPIXMAP_RIGHT } ;
```

```
enum { XmSTRING_BOTTOM, XmSTRING_TOP,
XmSTRING_RIGHT, XmSTRING_LEFT } ;
```

```
enum { XmICON_LABEL, XmICON_BUTTON, XmICON_TOGGLE,
XmICON_DRAG } ;
```

```
enum { XmFILL_NONE, XmFILL_PARENT, XmFILL_SELF,
XmFILL_TRANSPARENT } ;
```

```
enum { XmRECTANGLE, XmNON_RECTANGLE } ;
XmIconGadgetCallbackStruct
```

#### 27. IconGP.h

The following fields have been added to the XmIconGCacheObjPart structure:

```
XmRenderTable  render_table;
GC             selected_GC;
GC             inverse_GC;
Pixel          top_shadow_color;
Pixel          bottom_shadow_color;
Pixel          highlight_color;
Pixmap         background_pixmap;
Pixmap         top_shadow_pixmap;
Pixmap         bottom_shadow_pixmap;
Pixmap         highlight_pixmap;
GC             normal_GC;
GC             background_GC;
GC             insensitive_GC;
GC             top_shadow_GC;
```

What's In This Version

## 11i Features and Updates

```
GC      bottom_shadow_GC;
GC      highlight_GC;
Dimension spacing;
Dimension margin_width;
Dimension margin_height;
```

The following types have been removed:

```
XmIconGadgetClassPart
XmIconGadgetClassRec
```

The definition of the `XmIconGadgetPart` has changed.

### 28. ImageCache.h

The function `_XmInImageCache()` has changed its parameter declaration from `char *` to `String`:

```
extern Boolean _XmInImageCache(String image_name);
```

The following functions have been removed:

```
_XmInstallPixmapByDepth()
_XmGetPixmap()
_XmInstallPixmap()
```

### 29. LabelGP.h

The following fields have been added to the `XmLabelGCacheObjPart` structure:

```
GC      background_GC;
GC      top_shadow_GC;
GC      bottom_shadow_GC;
GC      highlight_GC;
Pixel   foreground;
Pixel   background;
Pixel   top_shadow_color;
Pixmap  top_shadow_pixmap;
Pixel   bottom_shadow_color;
Pixmap  bottom_shadow_pixmap;
Pixel   highlight_color;
Pixmap  highlight_pixmap;
```

The following fields have been added to the XmLabelGadgetPart structure:

```
Dimension  acc_left_delta;  
Dimension  acc_right_delta;  
Dimension  * baselines;  
XtEnum     fill_bg_box;  
Boolean    check_set_render_table;
```

The following function declarations have been moved to LabelGI.h:

```
_XmLabelCacheCompare();  
_XmCalcLabelGDimensions();  
_XmReCacheLabG();  
_XmAssignLabG_MarginHeight();  
_XmAssignLabG_MarginWidth();  
_XmAssignLabG_MarginLeft();  
_XmAssignLabG_MarginRight();  
_XmAssignLabG_MarginTop();  
_XmAssignLabG_MarginBottom();  
_XmProcessDrag();
```

### 30. LabelP.h

The following macro has been removed:

```
#define XmUNSPECIFIED    (~0)
```

The following fields have been added to XmLabelPart structure:

```
Boolean    computing_size;  
Dimension  acc_left_delta;  
Dimension  acc_right_delta;  
Dimension  * baselines;  
Boolean    check_set_render_table;
```

### 31. ListP.h

The following fields have been removed from Element, \*ElementPtr structure:

What's In This Version

## 11i Features and Updates

```
_XmString    name;  
Dimension    CumHeight;  
unsigned short NumLines
```

The following fields have been added to Element, \*ElementPtr structure:

```
wchar_t first_char;
```

The following fields have been renamed/retyped in XmListPart structure:

Motif 1.2	Motif 2.1
int *selectedIndices;	int *selectedPosition;
Boolean AutoSelect;	XtEnum AutoSelect;
Boolean AddMode;	unsigned char SelectionMode;

The following fields have been added to XmListPart structure:

```
int                selectedPositionCount;  
unsigned char     matchBehavior;  
unsigned char     AutoSelectionType;  
unsigned char     PrimaryOwnership;  
XtCallbackList   DestinationCallback;  
XmRendition      scratchRend;  
Pixel            selectColor;  
int              previous_top_position;  
XtIntervalId     drag_start_timer;  
char             *drag_abort_action;  
XEvent           drag_event;  
XmListDragConvertStruct *drag_conv;
```

### 32. ManagerP.h

The following element has been added to XmManagerClassExtRec, \*XmManagerClassExt structure:

```
XmObjectAtPointProc object_at_point;
```

The following function declarations have been moved to ManagerI.h:

```
_XmGadgetTraversePrevTabGroup();  
_XmGadgetTraverseNextTabGroup();  
_XmGadgetTraverseLeft();  
_XmGadgetTraverseRight();  
_XmGadgetTraverseUp();  
_XmGadgetTraverseDown();  
_XmGadgetTraverseNext();  
_XmGadgetTraversePrev();  
_XmGadgetTraverseHome();  
_XmGadgetSelect();  
_XmManagerParentActivate();  
_XmManagerParentCancel();  
_XmGadgetButtonMotion();  
_XmGadgetKeyInput();  
_XmGadgetArm();  
_XmGadgetDrag();  
_XmGadgetActivate();  
_XmManagerHelp();  
_XmGadgetMultiArm();  
_XmGadgetMultiActivate();
```

The following function declarations have been moved to XmI.h:

```
_XmSocorro() ;  
_XmParentProcess() ;  
_XmClearShadowType() ;  
_XmDestroyParentCallback() ;
```

### 33. MenuShellP.h

The following element has been added to XmMenuShellPart structure:

```
XmDirection layout_direction;
```

### 34. MessageBP.h

The following function declarations have been moved to MessageBI.h:

```
_XmMessageBoxGeoMatrixCreate();  
_XmMessageBoxNoGeoRequest();
```

What's In This Version

## 11i Features and Updates

### 35. PanedWP.h

The following `ifdef` element has been removed from `XmPanedWindowConstraintPart` structure:

```
#ifdef ORIENTED_PANEDW
unsigned char orientation;
#endif
```

The following elements have been added to `XmPanedWindowPart` structure:

```
unsigned char orientation;
XtIntervalId timer;
```

### 36. PrimitiveP.h

The following `ifndef` elements have been added to `XmPrimitivePart` structure:

```
#ifndef XM_PART_BC
XtCallbackList convert_callback;
XtCallbackList popup_handler_callback;
XmDirection layout_direction;
#endif
```

The following function declarations have been moved to `PrimitiveI.h`:

```
_XmTraverseLeft() ;
_XmTraverseRight() ;
_XmTraverseUp() ;
_XmTraverseDown() ;
_XmTraverseNext() ;
_XmTraversePrev() ;
_XmTraverseHome() ;
_XmTraverseNextTabGroup() ;
_XmTraversePrevTabGroup() ;
_XmPrimitiveHelp() ;
_XmPrimitiveParentActivate() ;
_XmPrimitiveParentCancel() ;
```

The following function has been removed:

`_XmDifferentBackground();`

37. `ProtocolsP.h`

The following function declaration has been moved to `ProtocolsI.h`:

`_XmInstallProtocols();`

38. `PushBGP.h`

The following function has been removed:

`_XmClearBGCompatibility();`

39. `PushBP.h`

The following function has been removed:

`XmClearBGCompatibility()`

40. `RegionI.h`

The following defines have been removed:

```
#define TRUE 1
#define FALSE 0
#ifndef MAX
#define MAX(a,b) (((a) > (b)) ? (a) : (b))
#endif
#ifndef MIN
#define MIN(a,b) (((a) < (b)) ? (a) : (b))
#endif
```

41. `RepTypeI.h`

The following defines have been removed:

```
#define XmREP_TYPE_STD_BIT          0x2000
#define XmREP_TYPE_RT_BIT           0x4000
#define XmREP_TYPE_MAP_BIT          0x8000
#define XmREP_TYPE_TAG_MASK         0xE000
#define XmREP_TYPE_OFFSET_MASK      0x1FFF
#define XmREP_TYPE_STD_MAP_TAG
```

What's In This Version

## 11i Features and Updates

```
(XmREP_TYPE_STD_BIT |           XmREP_TYPE_MAP_BIT)
#define XmREP_TYPE_STD_TAG       XmREP_TYPE_STD_BIT
#define XmREP_TYPE_RT_MAP_TAG    (XmREP_TYPE_RT_BIT
 | XmREP_TYPE_MAP_BIT)
#define XmREP_TYPE_RT_TAG       XmREP_TYPE_RT_BIT
#define XmREP_TYPE_STD_MAP(id) \
    ((id & XmREP_TYPE_TAG_MASK) ==
XmREP_TYPE_STD_MAP_TAG)
#define XmREP_TYPE_STD(id) \
    ((id & XmREP_TYPE_TAG_MASK) ==
XmREP_TYPE_STD_TAG)
#define XmREP_TYPE_RT_MAP(id) \
    ((id & XmREP_TYPE_TAG_MASK) ==
XmREP_TYPE_RT_MAP_TAG)
#define XmREP_TYPE_RT(id) \
    ((id & XmREP_TYPE_TAG_MASK) ==
XmREP_TYPE_RT_TAG)
#define XmREP_TYPE_MAPPED(id)    (id &
XmREP_TYPE_MAP_BIT)
#define XmREP_TYPE_OFFSET(id)    (id &
XmREP_TYPE_OFFSET_MASK)
#define XmREP_TYPE_TAG(id)       (id &
XmREP_TYPE_TAG_MASK)
```

The enum definition has been changed to the following:

```
enum {
    XmRID_ALIGNMENT,
    XmRID_ANIMATION_STYLE,
    XmRID_ARROW_DIRECTION,
    XmRID_ARROW_LAYOUT,
    XmRID_ARROW_ORIENTATION,
    XmRID_ARROW_SENSITIVITY,
    XmRID_ATTACHMENT,
    XmRID_AUDIBLE_WARNING,
    XmRID_AUTO_DRAG_MODEL,
    XmRID_AUTOMATIC_SELECTION,
    XmRID_BINDING_TYPE,
    XmRID_BITMAP_CONVERSION_MODEL,
    XmRID_BLEND_MODEL,
    XmRID_CHILD_HORIZONTAL_ALIGNMENT,
```

XmRID\_CHILD\_PLACEMENT,  
XmRID\_CHILD\_TYPE,  
XmRID\_CHILD\_VERTICAL\_ALIGNMENT,  
XmRID\_COMBO\_BOX\_LIST\_ACTION\_ACTION\_PARAMS,  
XmRID\_COMBO\_BOX\_TYPE,

XmRID\_COMMAND\_SELECTION\_BOX\_UP\_OR\_DOWN\_ACTION\_PARAMS,  
XmRID\_COMMAND\_WINDOW\_LOCATION,  
XmRID\_CONTAINER\_CURSOR\_ACTION\_PARAMS,

XmRID\_CONTAINER\_EXPAND\_OR\_COLLAPSE\_ACTION\_PARAMS,

XmRID\_CONTAINER\_START\_TRANSFER\_ACTION\_PARAMS,  
XmRID\_DEFAULT\_BUTTON\_EMPHASIS,  
XmRID\_DEFAULT\_BUTTON\_TYPE,  
XmRID\_DELETE\_RESPONSE,  
XmRID\_DIALOG\_STYLE,  
XmRID\_DIALOG\_TYPE,  
XmRID\_DIRECTION,  
XmRID\_DRAG\_INITIATOR\_PROTOCOL\_STYLE,  
XmRID\_DRAG\_RECEIVER\_PROTOCOL\_STYLE,  
XmRID\_DROP\_SITE\_ACTIVITY,  
XmRID\_DROP\_SITE\_TYPE,  
XmRID\_EDIT\_MODE,  
XmRID\_ENABLE\_BTN1\_TRANSFER,  
XmRID\_ENABLE\_WARP,  
XmRID\_ENTRY\_VIEW\_TYPE,  
XmRID\_FILE\_FILTER\_STYLE,

XmRID\_FILE\_SELECTION\_BOX\_UP\_OR\_DOWN\_ACTION\_PARAMS,  
XmRID\_FILE\_TYPE\_MASK,  
XmRID\_FONT\_TYPE,  
XmRID\_ICON\_ATTACHMENT,  
XmRID\_INDICATOR\_ON,  
XmRID\_INDICATOR\_TYPE,  
XmRID\_INPUT\_POLICY,  
XmRID\_KEYBOARD\_FOCUS\_POLICY,  
XmRID\_LABEL\_TYPE,  
XmRID\_LAYOUT\_TYPE,

What's In This Version

## 11i Features and Updates

XmRID\_LINE\_STYLE,  
XmRID\_LINE\_TYPE,  
XmRID\_LIST\_SIZE\_POLICY,  
XmRID\_LOAD\_MODEL,  
XmRID\_MATCH\_BEHAVIOR,  
XmRID\_MULTI\_CLICK,  
XmRID\_NAVIGATION\_TYPE,  
XmRID\_NB\_CHILD\_TYPE,  
XmRID\_NOTEBOOK\_TRAVERSE\_TAB\_ACTION\_PARAMS,  
XmRID\_ORIENTATION,  
XmRID\_OUTLINE\_BUTTON\_POLICY,  
XmRID\_OUTLINE\_STATE,  
XmRID\_PACKING,  
XmRID\_PANED\_WINDOW\_SASH\_ACTION\_PARAMS,

XmRID\_PANED\_WINDOW\_SASH\_DIRECTION\_ACTION\_PARAMS,

XmRID\_PANED\_WINDOW\_SASH\_INCREMENT\_ACTION\_PARAMS,

XmRID\_PATH\_MODE,  
XmRID\_POSITION\_MODE,  
XmRID\_POSITION\_TYPE,  
XmRID\_PRIMARY\_OWNERSHIP,  
XmRID\_PROCESSING\_DIRECTION,  
XmRID\_RESIZE\_POLICY,  
XmRID\_ROW\_COLUMN\_TYPE,  
XmRID\_SCROLL\_BAR\_DISPLAY\_POLICY,

XmRID\_SCROLL\_BAR\_INCREMENT\_DOWN\_OR\_RIGHT\_ACTION\_PARAMS,

XmRID\_SCROLL\_BAR\_INCREMENT\_UP\_OR\_LEFT\_ACTION\_PARAMS,

XmRID\_SCROLL\_BAR\_PAGE\_DOWN\_OR\_RIGHT\_ACTION\_PARAMS,

XmRID\_SCROLL\_BAR\_PAGE\_UP\_OR\_LEFT\_ACTION\_PARAMS,  
XmRID\_SCROLL\_BAR\_PLACEMENT,  
XmRID\_SCROLLED\_WINDOW\_CHILD\_TYPE,  
XmRID\_SCROLLING\_POLICY,

```
XmRID_SELECTION_BOX_UP_OR_DOWN_ACTION_PARAMS,  
    XmRID_SELECTION_MODE,  
    XmRID_SELECTION_POLICY,  
    XmRID_SELECTION_TECHNIQUE,  
    XmRID_SELECTION_TYPE,  
    XmRID_SEPARATOR_TYPE,  
    XmRID_SET,  
    XmRID_SHADOW_TYPE,  
    XmRID_SHOW_ARROWS,  
    XmRID_SHOW_VALUE,  
    XmRID_SLIDER_MARK,  
    XmRID_SLIDER_VISUAL,  
    XmRID_SLIDING_MODE,  
    XmRID_SPATIAL_INCLUDE_MODEL,  
    XmRID_SPATIAL_RESIZE_MODEL,  
    XmRID_SPATIAL_SNAP_MODEL,  
    XmRID_SPATIAL_STYLE,  
    XmRID_SPINBOX_CHILD_TYPE,  
    XmRID_STRING_DIRECTION,  
    XmRID_TEAR_OFF_MODEL,  
    XmRID_TEXT_EXTEND_MOVEMENT_ACTION_PARAMS,  
    XmRID_TEXTFIELD_DIRECTION_ACTION_PARAMS,  
  
XmRID_TEXTFIELD_EXTEND_MOVEMENT_ACTION_PARAMS,  
  
XmRID_TEXT_HORIZONTAL_DIRECTION_ACTION_PARAMS,  
    XmRID_TEXT_VERTICAL_DIRECTION_ACTION_PARAMS,  
    XmRID_TOGGLE_MODE,  
    XmRID_UNIT_TYPE,  
    XmRID_UNPOST_BEHAVIOR,  
    XmRID_VERTICAL_ALIGNMENT,  
    XmRID_VIEW_TYPE,  
    XmRID_VISUAL_EMPHASIS,  
    XmRID_VISUAL_POLICY,  
    XmRID_WHICH_BUTTON  
};
```

#### 42. ScaleP.h

The elements have been added to `XmScalePart` structure:

## What's In This Version

### 11i Features and Updates

XtEnum	sliding_mode;
XtEnum	slider_visual;
XtEnum	slider_mark;
XtEnum	show_arrows;
Boolean	editable;
XtCallbackList	convert_callback;
Region	value_region;

#### 43. ScreenP.h

The following elements have been removed from XmScratchPixmapRec structure:

XmScratchPixmap	next;
Pixmap	pixmap;
Boolean	inUse;

The following element has been redefined in XmScreenPart, \*XmScreenPartPtr structure:

Motif 1.2	Motif 2.1
-----------	-----------

XmScratchPixmap scratchPixmaps; XtPointer scratchPixmaps;

The following element has been added to XmScreenPart, \*XmScreenPartPtr structure:

XmScreenColorProc	color_calc_proc;
XmAllocColorProc	color_alloc_proc;
XtEnum	bitmap_conversion_model;
XtPointer	user_data;
Pixmap	insensitive_stipple_bitmap;
#ifdef DEFAULT_GLYPH_PIXMAP	
Pixmap	default_glyph_pixmap ;
unsigned int	default_glyph_pixmap_width ;
unsigned int	default_glyph_pixmap_height ;
#endif	
XtPointer	inUsePixmaps

#### 44. ScrollBarP.h

The following element has been redefined in XmScrollBarPart structure:

Motif 1.2

Motif 2.1

Boolean show\_arrows;    XtEnum show\_arrows;  
Boolean etched\_slider;    XtEnum etched\_slider;

The following elements have been added to XmScrollBarPart structure:

XtEnum slider\_mark;  
unsigned short snap\_back\_multiple;  
XtEnum sliding\_mode;  
Boolean editable;  
Mask dimMask;

45. ScrolledWP.h

The following element has been redefined in XmScrolledWindowPart structure:

Motif 1.2

Dimension GivenHeight, GivenWidth;

Motif 2.1

Position GivenHeight, GivenWidth;

The following elements have been added to XmScrolledWindowPart structure:

XtEnum                    auto\_drag\_model;  
XtIntervalId            auto\_drag\_timer;  
Boolean                    scroll\_frame\_initied;  
XmScrollFrameData    scroll\_frame\_data;  
XtPointer                auto\_drag\_rects;  
XtPointer                auto\_drag\_closure;

The following functions have been removed:

\_XmGetRealXlations();  
\_XmInitializeScrollBars();

What's In This Version

## 11i Features and Updates

The following elements have been added to `XmScrolledWindowConstraintPart`, \* `XmScrolledWindowConstraint` structure:

```
Position orig_x;  
Position orig_y;
```

### 46. `SelectioBP.h`

The following macro has been removed:

```
#define XmUNSPECIFIED      (~0)
```

The following function declarations have been moved `SelectioBI.h`:

```
_XmSelectionBoxCreateListLabel() ;  
_XmSelectionBoxCreateSelectionLabel() ;  
_XmSelectionBoxCreateList() ;  
_XmSelectionBoxCreateText() ;  
_XmSelectionBoxCreateSeparator() ;  
_XmSelectionBoxCreateOkButton() ;  
_XmSelectionBoxCreateApplyButton() ;  
_XmSelectionBoxCreateCancelButton() ;  
_XmSelectionBoxCreateHelpButton() ;  
_XmSelectionBoxGeoMatrixCreate() ;  
_XmSelectionBoxNoGeoRequest() ;  
_XmSelectionBoxGetSelectionLabelString() ;  
_XmSelectionBoxGetListLabelString() ;  
_XmSelectionBoxGetTextColumns() ;  
_XmSelectionBoxGetTextString() ;  
_XmSelectionBoxGetListItems() ;  
_XmSelectionBoxGetListItemCount() ;  
_XmSelectionBoxGetListVisibleItemCount() ;  
_XmSelectionBoxGetOkLabelString() ;  
_XmSelectionBoxGetApplyLabelString() ;  
_XmSelectionBoxGetCancelLabelString() ;  
_XmSelectionBoxGetHelpLabelString() ;  
_XmSelectionBoxUpOrDown() ;  
_XmSelectionBoxRestore() ;
```

### 47. `SeparatoGP.h`

The following elements have added to `XmSeparatorGCacheObjPart`

structure:

```
GC      background_GC;
GC      top_shadow_GC;
GC      bottom_shadow_GC;
Pixel   foreground;
Pixel   background;
Pixel   top_shadow_color;
Pixmap  top_shadow_pixmap;
Pixel   bottom_shadow_color;
Pixmap  bottom_shadow_pixmap;
```

The following element has been added XmSeparatorGadgetPart structure:

```
Boolean fill_bg_box;
```

The following function declaration has been moved to SeparatoGL.h:

```
_XmSeparatorCacheCompare()
```

#### 48. TearOffBP.h

The following element has been added to XmTearOffButtonPart structure:

```
Boolean set_recompute_size;
```

#### 49. TearOffP.h

The following function declarations have been moved TearOffI.h:

```
_XmTearOffBtnDownEventHandler() ;
_XmTearOffBtnUpEventHandler() ;
_XmDestroyTearOffShell() ;
_XmDismissTearOff() ;
_XmTearOffInitiate() ;
_XmAddTearOffEventHandlers() ;
_XmIsTearOffShellDescendant() ;
_XmLowerTearOffObscuringPoppingDownPanels() ;
_XmRestoreExcludedTearOffToToplevelShell() ;
_XmRestoreTearOffToToplevelShell() ;
_XmRestoreTearOffToMenuShell() ;
```

What's In This Version

## 11i Features and Updates

### 50. TextDIconI.h

The following constant arrays have been retyped:

#### Motif 1.2

```
static unsigned char XmTEXTUAL_DRAG_ICON_BITS_16[]
static unsigned char XmTEXTUAL_DRAG_ICON_MASK_BITS_16[]
static unsigned char XmTEXTUAL_DRAG_ICON_BITS_32[]
static unsigned char XmTEXTUAL_DRAG_ICON_MASK_BITS_32[]
```

#### Motif 2.1

```
static XmConst unsigned char
XmTEXTUAL_DRAG_ICON_BITS_16[]
static XmConst unsigned char
XmTEXTUAL_DRAG_ICON_MASK_BITS_16[]
static XmConst unsigned char
XmTEXTUAL_DRAG_ICON_BITS_32[]
static XmConst unsigned char
XmTEXTUAL_DRAG_ICON_MASK_BITS_32[]
```

The following macros have been renamed:

#### Motif 1.2

```
#define XmTEXTUAL_DRAG_ICON_WIDTH_CDE_16 16
#define XmTEXTUAL_DRAG_ICON_HEIGHT_CDE_16 16
#define XmTEXTUAL_DRAG_ICON_X_HOT_CDE_16 1
#define XmTEXTUAL_DRAG_ICON_Y_HOT_CDE_16 1
#define XmTEXTUAL_DRAG_ICON_WIDTH_CDE_32 32
#define XmTEXTUAL_DRAG_ICON_HEIGHT_CDE_32 32
#define XmTEXTUAL_DRAG_ICON_X_HOT_CDE_32 1
#define XmTEXTUAL_DRAG_ICON_Y_HOT_CDE_32 1
```

#### Motif 2.1

```
#define XmTEXTUAL_DRAG_ICON_WIDTH_Alt_16 16
#define XmTEXTUAL_DRAG_ICON_HEIGHT_Alt_16 16
#define XmTEXTUAL_DRAG_ICON_X_HOT_Alt_16 1
```

```
#define XmTEXTUAL_DRAG_ICON_Y_HOT_Alt_16 1  
#define XmTEXTUAL_DRAG_ICON_WIDTH_Alt_32 32  
#define XmTEXTUAL_DRAG_ICON_HEIGHT_AIE_32 32  
#define XmTEXTUAL_DRAG_ICON_X_HOT_Alt_32 1  
#define XmTEXTUAL_DRAG_ICON_Y_HOT_Alt_32 1
```

The following constant arrays have been renamed:

#### Motif 1.2

```
static unsigned char XmTEXTUAL_DRAG_ICON_BITS_CDE_16[]  
static unsigned char  
XmTEXTUAL_DRAG_ICON_MASK_BITS_CDE_16[]  
static unsigned char XmTEXTUAL_DRAG_ICON_BITS_CDE_32[]  
static unsigned char  
XmTEXTUAL_DRAG_ICON_MASK_BITS_CDE_32[]
```

#### Motif 2.1

```
static XmConst unsigned char  
XmTEXTUAL_DRAG_ICON_BITS_Alt_16[]  
static XmConst unsigned char  
XmTEXTUAL_DRAG_ICON_MASK_BITS_Alt_16[]  
static XmConst unsigned char  
XmTEXTUAL_DRAG_ICON_BITS_Alt_32[]  
static XmConst unsigned char  
XmTEXTUAL_DRAG_ICON_MASK_BITS_Alt_32[]
```

#### 51. TextFP.h

The following elements have been added to XmTextFieldPart structure:

What's In This Version

## 11i Features and Updates

```
XtCallbackList    destination_callback;
Boolean           selection_link;
Boolean           take_primary;
GC               cursor_gc;
XtIntervalId     drag_id;
_XmTextActionRec *transfer_action;
OnTheSpotData    onthespot;
Boolean          check_set_render_table;
Boolean          programmatic_highlights;
```

The following function declarations have been moved to TextFl.h:

```
_XmTextFieldCountBytes() ;
_XmTextFieldGetDropReceiver() ;
_XmTextFToggleCursorGC() ;
_XmTextFieldDrawInsertionPoint() ;
_XmTextFieldSetClipRect() ;
_XmTextFieldSetCursorPosition() ;
_XmTextFieldReplaceText() ;
_XmTextFieldDeselectSelection() ;
_XmTextFieldSetDestination() ;
_XmTextFieldStartSelection() ;
_XmTextFieldSetSel2() ;
```

### 52. TextFSelP.h

The following function declarations have been moved to TextFSelI.h:

```
_XmTextFieldConvert();
_XmTextFieldLoseSelection();
```

### 53. TextInP.h

The following elements have been added to InputDataRec structure:

```
Boolean selectionLink;
XtIntervalId drag_id;
_XmTextActionRec *transfer_action;
```

The following function declaration has been moved to TextSelI.h

```
_XmTextGetDropReceiver();
```

The following function declarations have been moved to TextInI.h:

```
_XmTextHasDestination();  
_XmTextSetDestinationSelection();  
_XmTextSetSel2();  
_XmTextGetSel2();  
_XmTextInputGetSecResData();  
_XmTextGetAnchor();  
_XmTextInputCreate();
```

#### 54. TextOutP.h

The following elements have been added to OutputDataRec structure:

```
XmRenderTable rendertable;  
GC cursor_gc;  
int scrollheight;  
int voffset;  
int tabheight;  
Dimension linewidth;  
Boolean suspend_voffset;
```

#### 55. TextP.h

The following function has been removed:

```
XmTextRemoveWordWrapFromTable();
```

The following function declarations have been moved to TextI.h:

```
_XmTextFindScroll();  
_XmTextGetTotalLines();  
_XmTextGetLineTable();  
_XmTextRealignLineTable();  
_XmTextGetTableIndex();  
_XmTextUpdateLineTable();  
_XmTextMarkRedraw();  
_XmTextNumLines();  
_XmTextLineInfo();  
_XmTextPosToLine();  
_XmTextInvalidate();
```

What's In This Version

## 11i Features and Updates

```
_XmTextSetTopCharacter();  
_XmTextCountCharacters();  
_XmTextSetCursorPosition();  
_XmTextDisableRedisplay();  
_XmTextEnableRedisplay();
```

### 56. TextSelP.h

The following function declarations have been moved to TextSel.h:

```
_XmTextConvert();  
_XmTextLoseSelection();
```

### 57. TextStrSoP.h

The following typedef has been moved to Xm.h:

```
typedef enum {EditDone, EditError, EditReject } XmTextStatus;
```

The following typedef has been moved to XmP.h:

```
typedef enum { XmsdLeft, XmsdRight } XmTextScanDirection;
```

The following element has been added to XmSourceDataRec structure:

```
Boolean take_selection;
```

The following file declarations have been moved to TextStrSoI.h

```
_XmStringSourceGetString() ;  
_XmTextFindStringBackwards() ;  
_XmTextFindStringForwards() ;  
_XmStringSourceFindString() ;  
_XmStringSourceSetGappedBuffer() ;  
_XmTextModifyVerify() ;  
_XmStringSourceCreate() ;  
_XmStringSourceDestroy() ;  
_XmStringSourceGetValue() ;  
_XmStringSourceSetValue() ;  
_XmStringSourceHasSelection() ;
```

```
_XmStringSourceGetEditable() ;  
_XmStringSourceSetEditable() ;  
_XmStringSourceGetMaxLength() ;  
_XmStringSourceSetMaxLength() ;  
_XmTextValueChanged();
```

58. ToggleBGP.h

The following element has been modified in  
XmToggleButtonGCacheObjPart structure:

Motif 1.2	Motif 2.1
Boolean ind_on;	unsigned char ind_on;

The following elements have been modified in  
XmToggleButtonGCacheObjPart structure:

GC	arm_GC;
unsigned char	toggle_mode;
Boolean	reversed_select;
Pixmap	indeterminate_pixmap;
Pixmap	indeterminate_insensitive_pixmap;
Pixel	unselect_color;
GC	unselect_GC;
GC	indeterminate_GC;
GC	indeterminate_box_GC;
Dimension	ind_left_delta;
Dimension	ind_right_delta;
Dimension	ind_top_delta;
Dimension	ind_bottom_delta;

The following element has been added to XmToggleButtonGadgetPart  
structure:

Dimension detail\_shadow\_thickness;

The following function declaration has been moved to ToggleBGI.h:

```
_XmToggleBCacheCompare();
```

59. ToggleBP.h

## What's In This Version

### 11i Features and Updates

The following elements have been changed in `XmToggleButtonPart` structure:

Motif 1.2	Motif 2.1
Boolean set;	unsigned char set;
Boolean visual_set;	unsigned char visual_set;
Boolean ind_on;	unsigned char ind_on;

The following elements have been added to `XmToggleButtonPart` structure:

GC	arm_GC;
unsigned char	toggle_mode;
Boolean	reversed_select;
Pixmap	indeterminate_pixmap;
Pixmap	indeterminate_insensitive_pixmap;
Pixel	unselect_color;
GC	unselect_GC;
GC	indeterminate_GC;
GC	indeterminate_box_GC;
Dimension	ind_left_delta;
Dimension	ind_right_delta;
Dimension	ind_top_delta;
Dimension	ind_bottom_delta;
Dimension	detail_shadow_thickness ;

#### 60. `TravActI.h`

The following function has been removed:

```
_XmGetFocusResetFlag();
```

#### 61. `TraversalI.h`

The following elements have been removed from `XmFocusDataRec` structure:

```
int      unused1;  
int      unused2;  
Widget * unused3;  
Cardinal unused4;
```

The following function has been removed:

```
_XmGetClippingAncestor();
```

The following functions have changed:

Motif 1.2

```
_XmIsScrollableClipWidget( Widget wid, XRectangle *visRect) ;  
_XmTraverse(XmTravGraph list,  
XmTraversalDirection action,  
Widget reference_wid) ;
```

Motif 2.1

```
_XmIsScrollableClipWidget(  
Widget work_window,  
Boolean scrollable,  
_XmTraverse(XmTravGraph list,  
XmTraversalDirection action,  
XmTraversalDirection *local_dir,  
Widget reference_wid)  
XRectangle *visRect) ;
```

62. VaSimpleP.h

The following ifdef defines have been removed:

```
#if (XtSpecificationRelease < 6)  
typedef struct _XtTypedArg {  
String name;  
String type;  
XtArgVal value;  
int size;  
} XtTypedArg;  
  
typedef struct _XtTypedArg* XtTypedArgList;  
#endif
```

The following function declarations have been moved to VaSimpleI.h:

What's In This Version

## 11i Features and Updates

```
_XmCountVaList();  
_XmVaToTypedArgList();
```

### 63. `VendorSEP.h`

The following element has been added to `XmVendorShellExtPart` structure:

```
XmDirection layout_direction;  
Boolean verify_preedit;
```

The following function declaration has been moved to `VendorSEI.h`:

```
_XmGetAudibleWarning();
```

The following functions have been removed:

```
_XmGetIconPixmapName();  
_XmClearIconPixmapName();
```

### 64. `VendorSP.h`

The following functions have been removed:

```
_XmFilterResources();  
_XmRootGeometryManager();  
_XmVendorExtRealize();
```

The following function declarations have been moved to `VendorSI.h`:

```
_XmAddGrab();  
_XmRemoveGrab();
```

The following function has been moved to `XmI.h`:

```
_XmGetDefaultDisplay();
```

### 65. `VirtKeysP.h`

The following structure has been moved to `XmP.h`:

```
XmKeyBindingRec;
```

The following functions have been moved to VirtKeysI.h:

```
_XmVirtKeysInitialize();  
_XmVirtKeysDestroy();  
_XmVirtKeysStoreBindings();  
_XmVirtKeysLoadFileBindings();  
_XmVirtKeysLoadFallbackBindings();
```

The following functions have been removed:

```
_XmVirtKeysHandler();  
_XmVirtualToActualKeysym();
```

#### 66. Xm.h

The following defines have been changed:

##### Motif 1.2

```
#define XmVERSION      1  
#define XmREVISION    2  
#define XmUPDATE_LEVEL 6  
#define XmVERSION_STRING "@(#)OSF/Motif Version 1.2.6"
```

```
#define XmDEFAULT_DARK_THRESHOLD      15  
#define XmDEFAULT_LIGHT_THRESHOLD    77  
#define XmDEFAULT_FOREGROUND_THRESHOLD 35
```

##### Motif 2.1

```
#define XmVERSION      2  
#define XmREVISION    1  
#define XmUPDATE_LEVEL 0  
#define XmVERSION_STRING "@(#)Motif Version 2.1.0"  
#define XmDEFAULT_DARK_THRESHOLD      20  
#define XmDEFAULT_LIGHT_THRESHOLD    93  
#define XmDEFAULT_FOREGROUND_THRESHOLD 70
```

The following type definitions have been changed:

What's In This Version

## 11i Features and Updates

### Motif 1.2

```
typedef struct _XmFontListRec *XmFontListEntry;  
typedef struct _XmFontListRec *XmFontList;  
typedef struct _XmStringRec * _XmString;
```

### Motif 2.1

```
typedef struct _XmRenditionRec **XmFontListEntry;  
typedef struct _XmRenderTableRec **XmFontList;  
typedef union _XmStringRec * _XmString;
```

The following element has been added to `XmListCallbackStruct` structure:

```
char auto_selection_type;
```

The following element has been added to `XmTextScanType` enum definition:

```
XmSELECT_OUT_LINE
```

The following element has been added to `XmHighlightMode` enum definition:

```
XmSEE_DETAIL
```

The following elements have been added to `XmTraversalDirection` definition:

```
XmTRAVERSE_GLOBALLY_FORWARD  
XmTRAVERSE_GLOBALLY_BACKWARD
```

The following function declaration has been moved to `ResConverI.h`:

```
XmRegisterConverters();
```

The following function declarations have been moved to `XmIm.h`:

```
XmImRegister();  
XmImUnregister();  
XmImSetFocusValues();  
XmImSetValues();  
XmImUnsetFocus();  
XmImGetXIM();  
XmImMbLookupString();  
XmImVaSetFocusValues();  
XmImVaSetValues();
```

#### 67. XmI .h

The following macros have been removed:

```
#define Max(x, y) (((x) > (y)) ? (x) : (y))  
#define Min(x, y) (((x) < (y)) ? (x) : (y))  
#define MOTIF_PRIVATE_GC INT_MAX
```

The following macros have been renamed:

Motif 1.2

```
#define AssignMax(x, y) if ((y) > (x)) x = (y)  
#define AssignMin(x, y) if ((y) < (x)) x = (y)
```

Motif 2.1

```
#define ASSIGN_MAX(x,y) if ((y) > (x)) x = (y)  
#define ASSIGN_MIN(x,y) if ((y) < (x)) x = (y)
```

The following macro has been changed:

Motif 1.2

```
#define XmStackAlloc(size, stack_cache_array) \  
    ((size) <= sizeof(stack_cache_array) \  
    ? (XtPointer)stack_cache_array \  
    : XtMalloc((unsigned)(size)))
```

What's In This Version

## 11i Features and Updates

```
#define XmStackFree(pointer, stack_cache_array) \
    if ((pointer) != ((XtPointer)(stack_cache_array))) \
        Xtfree(pointer);
```

### Motif 2.1

```
#define XmStackAlloc(size, stack_cache_array) \
    (((char*)(stack_cache_array) != NULL) && \
     ((size) <= sizeof(stack_cache_array))) \
    ? (char*)(stack_cache_array) \
    : XtMalloc((unsigned)(size))
```

```
#define XmStackFree(pointer, stack_cache_array) \
    if ((pointer) != ((char*)(stack_cache_array))) \
        Xtfree(pointer);
```

The following structure has been removed:

`XmFontListRec;`

The following structure has been moved to `XmStringI.h`:

`XmFontListContextRec;`  
`XmStringContextRec`

The following function declaration has been moved to `BaseClassI.h`:

`_XmSecondaryResourceData();`

### 68. `XmIm.h`

The following function declaration has been changed:

#### Motif 1.2

```
extern XIC XmImGetXIC(Widget w,
    XmInputPolicy input_policy,
    ArgList args,
    Cardinal num_args);
```

### Motif 2.1

```
extern XIC XmImGetXIC(Widget      w,  
    #if NeedWidePrototypes  
        unsigned int  input_policy,  
    #else  
        XmInputPolicy input_policy,  
    #endif /*NeedWidePrototypes*/  
    ArgList  args,  
    Cardinal num_args) ;
```

### 69. XmP .h

The following macro has been removed:

```
XtName(widget)  
XtIsRealized(widget)  
XtSuperclass(Widget)  
XtIsSensitive(widget)  
XtX(w)  
XtY(w)  
XtWidth(w)  
XtHeight(w)  
XtBorderWidth(w)  
XtBackground(w)  
XtSensitive(w)
```

The following defines have been removed:

```
XmDEFAULT_TOP_MARGIN  
XmDEFAULT_BOTTOM_MARGIN  
XtInheritFocusMovedProc
```

The following macros have been changed:

Motif 1.2

```
#define XtDisplay(widget)  \  
    (XtIsWidget(widget) ?  \  
    ((Widget)(widget))->core.screen->display : \  
    ((Object)(widget))->object.parent->core.screen->display)
```

What's In This Version

## 11i Features and Updates

```
#define XtScreen(widget) (XtIsWidget(widget) ? \
    ((Widget)(widget))->core.screen : \
    ((Object)(widget))->object.parent->core.screen)

#define XtWindow(widget) (XtIsWidget(widget) ? \
    ((Widget)(widget))->core.window : \
    ((Object)(widget))->object.parent->core.window)
```

### Motif 2.1

```
#define XtDisplay(widget) XtDisplayOfObject((Widget) widget)
#define XtScreen(widget) XtScreenOfObject((Widget) widget)
#define XtWindow(widget) XtWindowOfObject((Widget) widget)
```

The following function has been renamed and moved to Xm.h:

Motif 1.2	Motif 2.1
-----------	-----------

<code>_XmInputInGadget();</code>	<code>XmObjectAtPoint();</code>
----------------------------------	---------------------------------

The following functions have been renamed:

Motif 1.2	Motif 2.1
-----------	-----------

<code>_XmConfigureObject();</code>	<code>XmeConfigureObject();</code>
<code>_XmWarning();</code>	<code>XmeWarning();</code>
<code>_XmStringsAreEqual();</code>	<code>XmeStringsAreEqual();</code>
<code>_XmGetDefaultFontList();</code>	<code>XmeGetDefaultRenderTable();</code>
<code>_XmToHorizontalPixels();</code>	<code>XmeToHorizontalPixels();</code>
<code>_XmToVerticalPixels();</code>	<code>XmeToVerticalPixels();</code>
<code>_XmFromHorizontalPixels();</code>	<code>XmeFromHorizontalPixels();</code>
<code>_XmFromVerticalPixels();</code>	<code>XmeFromVerticalPixels();</code>
<code>_XmNavigChangeManaged();</code>	<code>XmeNavigChangeManaged();</code>

The following function declarations have been moved to GadgetUtil.h:

```
_XmInputForGadget();
_XmDispatchGadgetInput();
```

The following function declarations have been moved to ResConverI.h:

```
_XmRegisterConverters();  
_XmConvertCSToString();  
_XmCvtXmStringToCT();
```

The following functions have been removed:

```
_XmResizeObject();  
_XmMoveObject();  
_XmGetDefaultTime();  
_XmGetPixmap();  
_XmSortResourceList();  
_XmInstallPixmapByDepth();  
_XmInstallPixmap();  
_XmGrabTheFocus();  
_XmFindNextTabGroup();  
_XmFindPrevTabGroup();  
_XmFocusIsInShell();  
_XmProcessTraversal();
```

The following function declarations have been moved to SyntheticI.h:

```
_XmBuildResources();  
_XmInitializeSyntheticResources();  
_XmPrimitiveGetValuesHook();  
_XmGadgetGetValuesHook();  
_XmManagerGetValuesHook();  
_XmExtGetValuesHook();  
_XmExtImportArgs();  
_XmPrimitiveImportArgs();  
_XmGadgetImportArgs();  
_XmGadgetImportSecondaryArgs();  
_XmManagerImportArgs();
```

The following function declaration has been moved to ResIndI.h:

```
_XmConvertUnits();  
_XmUnitTypeDefault();  
_XmGetUnitType();
```

What's In This Version

## 11i Features and Updates

The following function declaration has been moved to TraversalI.h:

```
_XmCreateFocusData();  
_XmDestroyFocusData();  
_XmSetActiveTabGroup();  
_XmGetActiveItem();  
_XmNavigInitialize();  
_XmNavigSetValues();  
_XmNavigResize();  
_XmValidateFocus();  
_XmNavigDestroy();  
_XmCallFocusMoved();  
_XmMgrTraversal();  
_XmClearFocusPath();  
_XmFocusIsHere();  
_XmGetFocusPolicy();  
_XmFindTopMostShell();  
_XmFocusModelChanged();  
_XmGetFocusData();  
_XmCreateVisibilityRect();  
_XmSetRect();  
_XmIntersectRect();  
_XmEmptyRect();  
_XmClearRect();  
_XmIsNavigable();  
_XmWidgetFocusChange();  
_XmNavigate();  
_XmSetInitialOfTabGroup();  
_XmResetTravGraph();  
_XmShellIsExclusive();  
_XmGetFirstFocus();
```

The following function declarations have been moved to DragOverSI.h:

```
_XmDragOverGetActiveCursor();  
_XmDragOverSetInitialPosition();
```

The following function declarations have been moved to RegionI.h:

```
_XmRegionCreate();  
_XmRegionCreateSize();  
_XmRegionComputeExtents();  
_XmRegionGetExtents();  
_XmRegionUnionRectWithRegion();  
_XmRegionIntersectRectWithRegion();  
_XmRegionGetNumRectangles();  
_XmRegionGetRectangles();  
_XmRegionSetGCRegion();  
_XmRegionDestroy();  
_XmRegionOffset();  
_XmRegionIntersect();  
_XmRegionUnion();  
_XmRegionSubtract();  
_XmRegionIsEmpty();  
_XmRegionEqual();  
_XmRegionPointInRegion();  
_XmRegionClear();  
_XmRegionShrink();  
_XmRegionDrawShadow();
```

The following function declarations have been moved to DragUnderI.h:

```
_XmDragUnderAnimation();
```

The following ifdef section has been removed:

```
#ifdef XM_1_1_BC
```

```
/* The following symbols are OBSOLETE and SHOULD NOT be  
used.
```

```
* They are provided here as a source compatibility convenience,
```

```
* to support the transition to the Motif 1.2 source environment.
```

```
*/
```

What's In This Version

## 11i Features and Updates

```
#define XmVPANED_BIT           XmPANED_WINDOW_BIT
#define LOOK_AT_SCREEN        (1<<0)
#define LOOK_AT_CMAP          (1<<1)
#define LOOK_AT_BACKGROUND    (1<<2)
#define LOOK_AT_FOREGROUND    (1<<3)
#define LOOK_AT_TOP_SHADOW    (1<<4)
#define LOOK_AT_BOTTOM_SHADOW (1<<5)
#define LOOK_AT_SELECT        (1<<6)

#define XmStrlen(s)    ((s) ? strlen(s) : 0)

#define DEFAULT_INDICATOR_DIM 9

#ifndef MAX
#define MAX(x,y)    ((x) > (y) ? (x) : (y))
#endif

#define RX(r)      (((RectObj) r)->rectangle.x)
#define RY(r)      (((RectObj) r)->rectangle.y)
#define RWidth(r)  (((RectObj) r)->rectangle.width)
#define RHeight(r) (((RectObj) r)->rectangle.height)
#define RBorder(r) (((RectObj) r)->rectangle.border_width)

#define GMode(g)    ((g)->request_mode)
#define IsX(g)      (GMode (g) & CWX)
#define IsY(g)      (GMode (g) & CWY)
#define IsWidth(g)  (GMode (g) & CWidth)
#define IsHeight(g) (GMode (g) & CHeight)
#define IsBorder(g) (GMode (g) & CBorderWidth)
#define IsWidthHeight(g) ((GMode (g) & CWidth) || (GMode (g)
& CHeight))
#define IsQueryOnly(g)    (GMode (g) & XtCWQueryOnly)

#define MAXDIMENSION ((1 << 31)-1)

#define Max(x, y)    (((x) > (y)) ? (x) : (y))
#define Min(x, y)    (((x) < (y)) ? (x) : (y))
#define AssignMax(x, y) if ((y) > (x)) x = (y)
#define AssignMin(x, y) if ((y) < (x)) x = (y)

#define DIALOG_SUFFIX "_popup"
#define DIALOG_SUFFIX_SIZE 6
```

```
#define XM_3D_ENHANCE_PIXEL 2
#define XM_DEFAULT_TOP_MARGIN 0
#define XM_DEFAULT_BOTTOM_MARGIN 0

externalref WidgetClass xmWorldObjectClass;
externalref WidgetClass xmDesktopObjectClass;
externalref WidgetClass xmDisplayObjectClass;
externalref WidgetClass xmScreenObjectClass;

#ifndef _XmNO_BC_INCL

#include <Xm/VendorSP.h>
#include <Xm/ManagerP.h>
#include <Xm/PrimitiveP.h>
#include <Xm/GadgetP.h>

#endif /* _XmNO_BC_INCL */
#endif /* XM_1_1_BC */
```

#### 70. XmosP.h

The following macro has been moved to XmosI.h:

```
_XmOSProcessUnmappedCharsetAndTex;
```

The following function declarations have been moved XmosI.h:

```
_XmOSFindPatternPart();
_XmOSQualifyFileSpec();
_XmOSGetDirEntries();
_XmOSBuildFileList();
_XmOSFileCompare();
_XmOSInitPath();
_XmOSBuildFileName();
extern int _XmOSPutenv();
```

The following functions have been renamed and moved to XmP.h:

What's In This Version

## 11i Features and Updates

Motif 1.2

Motif 2.1

<code>_XmOSGetHomeDirName();</code>	<code>XmeGetHomeDirName();</code>
<code>_XmMicroSleep();</code>	<code>XmeMicroSleep();</code>
<code>_XmOSGetLocalizedString();</code>	<code>XmeGetLocalizedString();</code>

The following functions have been removed:

```
_XmSleep();  
_XmOSSetLocale();
```

71. `regexI.h`

The following structure has been renamed:

Motif 1.2	Motif 2.1
<code>_sun_regex</code>	<code>_XmRegexRec</code>

## Notes for Other Components

### X11R6 Athena Widget Set

The Developer's Toolkit includes libraries for the Athena Widget Set (Xaw) and Miscellaneous Utilities (Xmu) as part of the X11R6-PRG-CTRB fileset. Both libraries (`libXaw.a` and `libXmu.a`) are located in `/usr/contrib/X11R6/lib`. Library header files reside in `/usr/contrib/X11R6/include/X11/Xaw` and `/usr/contrib/X11R6/include/X11/Xmu`.

*The Athena Widget Set - C Language Interface*, an X Consortium document, is available in postscript format and can be found in `/usr/contrib/X11R6/doc`.

### Imake Configuration Tool

The HP-UX 11i development environment provides the Imake configuration management tool. This version is based on the X11 R6 implementation released by the X Consortium.

### Technical Print Service

The Technical Print Service is a network transparent printing system which allows X applications to generate and send X imaging data to a non-display device such as a printer. It provides an X print server that is capable of generating page description language (PDL) output. Applications integrated with the Technical Print Service can send printed output to a variety of printers regardless of the associated page description language. The Technical Print Service provides print drivers for postscript, PCL, and raster images.

---

**NOTE**

The Technical Print Service is an implementation of the X Print Service technology developed by Hewlett Packard for the X Consortium.

The X Print Service is a collection of components derived from the X 11 Window System, Motif, and Common Desktop Environment (CDE) technologies. For application developers, the main components include:

What's In This Version  
**Notes for Other Components**

### **X Print Extension Library**

The X Print Extension library provides protocol extensions to allow an application to generate print "jobs", "documents", and "pages", and to manage a Print Context.

### **Print Dialog GUI**

The Print Dialog provides a graphical interface that allows a user to select printers and their associated X print servers. It also presents generic printer and job setup options and a hook to the Print Dialog Manager. This dialog can be customized to include application-specific information.

### **Print Dialog Manager**

The Print Dialog Manager is a process which provides application print dialogs for setting printer-specific options. In general the Print Dialog Manager is managed by the Print Dialog GUI, however, applications may intervene.

### **Localizing Applications that use DtPrintSetupBox**

For the locales it supports, the DtPrintSetupBox widget obtains localized strings for its GUI labels and messages from its own message catalog. As such, developers do not need to provide localized strings for the DtPrintSetupBox widget. However, when the DtNprintSetupMode resource is set to DtPRINT\_SETUP\_XP (the default) the DtPrintSetupBox installs default procedures for various operations. Some of these default procedures (printerInfoProc, selectPrinterProc, and selectFileProc) in turn present dialogs that utilize stock Motif widgets. Motif does not utilize a message catalog, so in order to present localized labels in these widgets, some additional lines need to be added to the application's app-defaults file. An example of the additional resource file lines (with English values) is shown below:

```
!Get XmFileSelectionBox resources via the Dt app-defaults file
#include "/usr/dt/app-defaults/C/Dt"

*XmMessageBox*okLabelString:      OK
*XmMessageBox*cancelLabelString:  Cancel
*XmMessageBox*helpLabelString:    Help

*XmSelectionBox*okLabelString:    OK
*XmSelectionBox*cancelLabelString: Cancel
```

\*XmSelectionBox\*helpLabelString: Help

## Documentation

The following man pages document the Technical Print Service:

DtCreatePrintSetupBox(3)	XpGetPageDimensions(3)
DtCreatePrintSetupDialog(3)	XpGetPdmStartParams(3)
DtPrintCopySetupData(3)	XpGetPrinterList(3)
DtPrintFillSetupData(3)	XpGetScreenOfContext(3)
)	
DtPrintFreeSetupData(3)	XpInputSelected(3)
DtPrintResetConnection(3)	
XpPutDocumentData(3)	DtPrintSetupBox(3)
XpQueryExtension(3)	
DtPrintSetupProc(3)	XpQueryScreens(3)
XmPrintPopupPDM(3)	XpQueryVersion(3)
XmPrintSetup(3)	XpRehashPrinterList(3)
XmPrintShell(3)	XpSelectInput(3)
XmPrintToFile(3)	XpSetAttributes(3)
XmRedisplayWidget(3)	XpSetContext(3)
XpCancelDoc(3)	XpSetImageResolution(3)
XpCancelJob(3)	XpSetLocaleHinter
(3)	XpCancelPage(3)
XpStartDoc(3)	XpCreateContext(3)
XpStartJob(3)	XpDestroyContext(3)
	XpStartPage(3)
XpEndDoc(3)	dtpdm(1M)
XpEndJob(3)	dtpdmd(1M)
XpEndPage(3)	tps(5)
XpFreePrinterList(3)	tpsconfig(1M)
XpGetAttributes(3)	tpsconvert(1M)
XpGetContext(3)	tpsedit(1M)
XpGetDocumentData(3)	tpsdocument(4)
XpGetImageResolution(3)	tpsjob(4)
XpGetLocaleHinter(3)	tpsprinter(4)
XpGetOneAttribute(3)	tpsshowmodel(1M)

For other documentation sources refer to Chapter 7, "What Manuals are Available for This Version."

What's In This Version  
**Notes for Other Components**

# **3 Known Problems and Bugs**

## **CDE Threads and Signal Handling**

**Terminal Widget Library (libDtTerm)** LibDtTerm currently takes ownership of both the SIGCHLD and SIGPIPE signals. The SIGCHLD signal is used by libDtTerm to update internal information regarding the state of the process spawned within the dtterm widget. This implies that an application which links with the libDtTerm library, and creates dtterm widgets, must not attempt to catch the SIGCHLD signal, and should block the signal in all other threads. The SIGPIPE signal is used by libDtTerm only if logging has been enabled. If an application uses the libDtTerm library, but does not take advantage of the logging facilities, then libDtTerm will not take control of the SIGPIPE handler.

## **CDE Hostname Character Length**

CDE does not support hostnames which are greater than 8 characters.

Many types of networking services are supported on HP-UX, each of which uses a separately assigned system name and naming convention. To ensure predictable system behavior, it is essential that system names (also called host names or node names) be assigned in such a manner that they do not create conflicts when the various networking facilities interact with one another.

One of the networking services used by CDE is `uname(2)`. This is a POSIX.1, XPG4 compliant interface which restricts node names (system names) to 8 characters (plus a trailing NULL). This requires that CDE limit system names to 8 characters.

## **Man Page Filename Truncation**

The `XmRepTypeInstallTearOffModelConverter.3` man page file name was truncated to accommodate a file name character length restriction imposed by the CD-ROM media. The man page can be located using the name: `XmRepTypeInstallTearOffModelConvert.3`.

## Help System XPM Graphics

When using an `xpm` graphic with the Help System, it is strongly recommended that you fill out the `xpm` specification completely—that is, specify a color value, a gray value, and a monochrome value for each pixel. This allows the Help System to degrade the `xpm` image to your specifications if it cannot allocate all of the colors for a particular graphic. This may occur, for example, when Help is viewed on a display that does not have full color support. It may also occur if Help is viewed on a system that has other applications which make extensive use of the device's color map. In these instances, if you have not completed the `xpm` specification, the Help System will display the "Missing Graphic" icon instead of your `.xpm` image.

## **Application Conflicts With DtHelp Searches**

The following information only applies if you are not using `Xt[App]MainLoop()` to process all events for an application.

There may be an architectural conflict if an application uses `Xt[App]PeekEvent()` and `Xt[App]ProcessEvent()` to process X events. If the application calls `Xt[App]ProcessEvent()` only when `Xt[App]PeekEvent()` returns true, a DtHelp index search will never complete.

A work procedure is registered when the user selects the Index button in a General Help Dialog. In effect, the 'search' occurs only when the application is not busy doing something else. If `Xt[App]ProcessEvent()` is called only when there is an X event, it (the X event) takes precedence over any work procedure registered.

Therefore the Search work procedure is never called/completed.

The best way around this is to use `Xt[App]MainLoop()` to do your event processing.

If you cannot do this, then register your own work procedure before creating any help dialogs. The work procedure can be very simple (a return FALSE) or do the work you want to do if there is no other X event or work procedure pending. Therefore, when a search occurs, its work procedure will take precedence over your work procedure and X events will take precedence over all.

The key is to always call `Xt[App]ProcessEvent()` so that the search work procedure will occur. If no search is in progress, your work procedure will occur, causing the `Xt[App]ProcessEvent()` to not block.

## **10.20 to 11i Update**

When an update from HP-UX 10.20 to 11i is completed, the 10.20 version of X11MotifDevKit may be left on the system. This version of X11MotifDevKit is required by those applications that have an implied dependency on it. GraphicsPEXDK is one of these applications. Applications that are built on a 10.20 system, then updated to 11i, are guaranteed to run. Therefore, leaving the 10.20 version of X11MotifDevKit on the system until new development is required, is common. Any new development on HP-UX 11i will require a new version of X11MotifDevKit and new compilers which are included in the C/ANSI C bundle (B3899BA) on the Application Media CD ROM.

Known Problems and Bugs  
**10.20 to 11i Update**

# 4 Compatibility Information and Installation Requirements

Read this entire document and any other Release Notes or READMEs you may have before you begin an installation or update.

If you install all the components included in the HP-UX Developer's Toolkit, you will need approximately 100 megabytes of disk space.

The HP-UX Developer's Toolkit consists of these products:

X11MotifDevKit	This product contains the libraries and functions which allow you to use X11 R6 Xlib and Xt Intrinsic, OSF/Motif, Imake, and X print extension library.
CDEDevKit	This contains the libraries and functions for the Common Desktop Environment. There are seven libraries: Desktop Services, Help Widget, Terminal Widget, Custom Widget, Calendar Services, ToolTalk Messaging, and Print Widget.
AudioDevKit	This contains the libraries and functions to include audio in your applications.
ImagingDevKit	This contains the libraries and functions to include imaging in your applications.

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**NOTE**

For technical print applications, both the X11MotifDevKit and CDEDevKit products must be installed.

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## **Installation**

To install your software, run the SD-UX `swinstall` command. It will invoke a user interface that will lead you through the installation.

Perform any necessary tasks to get the system running. The manuals *Managing HP-UX Software with SD-UX (B2355-90089)* and *Installing HP-UX 10.0 (B2355-90086)* have this information. You may also need to use user documentation for other parts of the system, such as networking, system security, and windowing.

### **CDE Developer's Toolkit Update**

Any previous version of the CDE Developer's Toolkit can be updated to the 11i CDE Developer's Toolkit using the following command:

```
swinstall -x reinstall=true -x reinstall_files=true \  
          -x match_target=true -s <source>
```

---

## Linking Mixed Shared and Archived Libraries

Application developers should be aware of potential problems associated with linking an archived library below a shared library — that is, resolving shared library external reference symbols with an archived library. Minor changes or bug fixes to a shared library may add external references which were not present at the time an application was linked. If the application does not contain a path to the shared library containing the newly referenced symbols, a fatal application error will result.

In general, if an application uses an archived library, be sure that other libraries containing dependencies on that archived library (those stacked "on top" of the archived library) are also linked archived rather than shared.

### Examples of Stacked Libraries

In these examples, assume that `libB` has dependencies on `libA` (since it uses symbols from `libA`). Also, both `libA` and `libB` have dependencies on the standard `libc`.

#### *Appropriately Stacked Libraries*

All Shared Libraries                    `libB.sl`  
    `libA.sl`  
    `libc.sl`

Archived Library Stacked on Shared Library `libB.a`  
    `libA.sl`  
    `libc.sl`

#### *Problematic Stacked Libraries*

Shared Libraries Stacked on Archived Library `libB.sl`  
    `libA.sl`  
    `libc.a`

Shared Library Stacked on Archived Library `libB.sl`  
    `libA.a`  
    `libc.sl`

## **Dynamic Loading of Versioned Libraries**

When developing an application that dynamically loads versioned libraries, the name used for loading a library requires special attention. Applications should not dynamically load versioned libraries with names of the form *library\_name.so*. Names ending in the *.so* extension are generally associated with symbolic links to one of several possible versions of a library. Although these links are installed in the development environment, they are not typically present in the run-time environment.

To ensure the correct version of a library is loaded, use the name that includes the version extension of the library executable. Use the file name referenced by the `libA.so` symbolic link for the library in question. For example, if `libA.so` is a symbolic link to `libA.1`, then use `libA.1` for dynamic loading.

## **X11 Release 6 libXt Dependencies**

Developers should include "-ISM -ICE" in their Makefile because of Release 6 libXt dependencies on libSM and libICE.

Compatibility Information and Installation Requirements  
**X11 Release 6 libXt Dependencies**

# **5                    What's Fixed in this Version**

What's Fixed in this Version

## Patch Releases

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### Patch Releases

A description of HP-UX patch releases is available on the World Wide Web. You can access HP's Electronic Support Center using the following URLs:

US, Canada, Asia-Pacific, and Latin America

<http://us-support.external.hp.com>

Europe

<http://europe-support.external.hp.com>

This information can also be obtained from an ftp server. Use anonymous ftp to access the server `hpatlse.atl.hp.com`. Change directories to `hp-ux_patches/s700_800/` and select the appropriate version to browse patch information.

# **6 Questions and Answers**

This section contains no additional material for this release of the Developer's Toolkit.

## Questions and Answers

# **7            What Manuals are Available for This Version**

## **Developer's Toolkit Documentation**

Documentation for the HP-UX Developer's Toolkit is delivered on the HP Instant Information CD-ROM. The only printed documentation you will receive are these release notes.

On the CD-ROM, manuals are organized into book collections, one of which is the Developer's Toolkit. You can easily browse the online manuals or search for specific information.

The HP-UX 11i HP Instant Information CD-ROM part number is 50726-10314. You can order the CD-ROM using the HP-UX documentation order number, B3921 EA #0BC (manuals on CD).

### **HP Instant Information CD-ROM**

- **Motif and X Programming manuals**
  - *Motif Programmer's Guide for Release 2.1* (B1171-90145)
  - *Motif User's Guide for Release 2.1* (B1171-90146)
  - *Motif and Common Desktop Environment: Style Guide Reference* (B1171-90147)
  - *Motif and Common Desktop Environment: Style Guide* (B1171-90148)
  - *Motif and Common Desktop Environment: Style Guide Certification Checklist* (B1171-90149)
  - *Motif Widget Writer's Guide* (B1171-90150)
  - *Motif Glossary* (B1171-90151)
  - *HP Xlib Extensions* (B1171-90078)
- **Common Desktop Environment manuals**
  - *CDE Programmer's Overview* (B1171-90152)
  - *CDE Programmer's Guide* (B1171-90153)
  - *CDE Desktop Korn Shell User's Guide* (B1171-90156)
  - *CDE Help System Author's and Programmer's Guide* (B1171-90154)

What Manuals are Available for This Version  
**Developer's Toolkit Documentation**

- *CDE ToolTalk Messaging Overview* (B1171-90157)
- *HP ToolTalk Programmer's Guide* (B1171-90163)
- *Guide to the DocBook DTD* (B1171-90158)
- *Common Desktop Environment: Product Glossary* (B1171-90159)
- **Multimedia manuals**
  - *Using the Audio Developer's Kit* (B2355-90069)
  - *Using the Image Developer's Kit* (B2355-90068)
- **Technical Print Service**
  - The *Technical Print Service System Administrator's Guide* is provided online. It can be viewed using the CDE Help Manager.
  - The online information is also available in a hardcopy version which can be sent directly to a printer. A PCL and Postscript file can be found in `/usr/share/doc/TechPrintServ/C` directory. This manual is provided online only and cannot be ordered as a separate product.

**Other Online Information**

- The CDE desktop provides online help information related to the Toolkit product. Use the CDE Help Manager to view these help volumes:
  - **Fonts: HP-UX Specific Information**
  - *Technical Print Service System Administrator's Guide*

**Other Related Technical Documentation**

- *X Toolkit Intrinsic Programming Manual, Vol 4*, O'Reilly & Associates (B1171-90053)
- *X Toolkit Intrinsic Reference Manual, Vol 5*, O'Reilly & Associates (B1171-90054)
- *Xlib Programming Manual, Vol 1*, O'Reilly & Associates (B1171-90051)
- *Xlib Reference Manual, Vol 2*, O'Reilly & Associates (B1171-90052)
- *X Window System User's Guide Motif Edition* by Valerie Quercia and Tim O'Reilly. ISBN 1-56592-015-5, O'Reilly & Associates, Inc.
- *Thread Time: The Multithreaded Programming Guide* by Scott J.

What Manuals are Available for This Version

**Developer's Toolkit Documentation**

Norton and Mark D. DiPasquale. ISBN 0-13-190067-6, Prentice-Hall

- *Programmer's Supplement for Release R6* edited by Adrain Nye. ISBN 1-56592-089-9, O'Reilly & Associates, Inc.

These books can be ordered at your local computer bookstore. You may also order O'Reilly & Associates manuals directly from O'Reilly & Associates.

- US & Canada orders, call (800) 998-9938 (voice) or (707) 829-0104 (fax); or
- From all other locations, call (707) 829-0515.

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## **8 Software Availability in Native Languages**

The HP-UX Developer's Toolkit can be ordered either as an English or Japanese product. The products are distinct only in that some documentation may be localized.