

# **Developer's Toolkit Release Notes for HP-UX 11i Version 1.5**



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# **1 Developer's Toolkit Release Notes for HP-UX 11i Version 1.5**

## **Product Overview**

The HP-UX Developer's Toolkit provides information needed to develop applications using the following technologies on HP-UX 11i Version 1.5 systems.

- OSF/Motif 2.1
- X11 R6.2 Xlib
- X11 R6.2 Xt Intrinsics
- X11 R6.2 Athena Widget Set
- Imake

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**NOTE**

*The HP-UX 11i Version 1.5 operating system contains the X11 R5 runtime libraries allowing applications built with earlier versions to execute correctly.*

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## **New/Changed Features**

### **Audio, Imaging and CDE Devkit Products Removed**

The Audio, Imaging and CDE Developer's Toolkit products have been removed from HP-UX Developer's Toolkit 11i Version 1.5.

### **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 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 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:

[www.opengroup.org/desktop/](http://www.opengroup.org/desktop/)

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### **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The following functions have been replaced by macros: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

These fields have been added to the XmCascadeButtonGCacheObjPart structure:

GC arm\_gc;  
GC background\_gc;

The following functions have been removed:

**New/Changed Features**

`_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

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;
```

## New/Changed Features

```
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 DisplayI.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>     |

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

Developer's Toolkit Release Notes for HP-UX 11i Version 1.5  
**New/Changed Features**

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:

```
_XmBuildGadgetResources()
```

#### 25. IconFileP.h

The following defines have been removed:

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

The following function has been removed:

```
_XmOSGenerateMaskName()
```

Developer's Toolkit Release Notes for HP-UX 11i Version 1.5  
**New/Changed Features**

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;  
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. ImageCachI.h

## New/Changed Features

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:

```
_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:

## New/Changed Features

### Motif 1.2

```
int *selectedIndices;  
Boolean AutoSelect;  
Boolean AddMode;
```

### Motif 2.1

```
int *selectedPosition;  
XtEnum AutoSelect;  
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();
```

### 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:

## New/Changed Features

unsigned char orientation;  
XtIntervalId timer;

### 36. PrimitiveP.h

The following ifdef 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
(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) \
```

## New/Changed Features

```
        ((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_PARA
```

MS,

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,  
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,

**New/Changed Features**

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:

```
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:

**New/Changed Features**

```
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();

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

Position orig\_x;  
Position orig\_y;

#### 46. SelectioBP.h

## New/Changed Features

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 SeparatoGI.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() ;
```

#### 50. TextDIconI.h

## New/Changed Features

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:

## New/Changed Features

|                  |                          |
|------------------|--------------------------|
| 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 TextFSel.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 TextSel.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();
```

**New/Changed Features**

```
_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

## New/Changed Features

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:

## New/Changed Features

```
_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:

## New/Changed Features

### 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)))
```

**New/Changed Features**

```
#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. XnP.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)
```

## New/Changed Features

```
#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();
```

## New/Changed Features

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.  
*/
```

**New/Changed Features**

```

#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;

#ifdef _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:

**New/Changed Features**

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. `regexpI.h`

The following structure has been renamed:

|                          |                           |
|--------------------------|---------------------------|
| Motif 1.2                | Motif 2.1                 |
| <code>_sun_regexp</code> | <code>_XmRegexpRec</code> |

## Notes for Other Components

### X11R6 Athena Widget Set

The Developer's Toolkit includes header files for the Athena Widget Set (Xaw) and Miscellaneous Utilities (Xmu) as part of the X11R6-PRG-CTRB fileset. Header files for Xaw and Xmu 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 Version 1.5 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:

## **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.

### **Documentation**

The following man pages document the Technical Print Service:

|                         |                         |
|-------------------------|-------------------------|
| XmPrintPopupPDM(3)      | XpGetPageDimensions(3)  |
| XmPrint Setup(3)        | XpGetPdmStartParams(3)  |
| XmPrintShell(3)         | XpGetPrinterList(3)     |
| XmPrintToFile(3)        | XpGetScreenOfContext(3) |
| XmRedisplayWidget(3)    | XpInputSelected(3)      |
| XpCancelDoc(3)          | XpPutDocumentData(3)    |
| XpCancelJob(3)          | XpQueryExtension(3)     |
| XpCancelPage(3)         | XpQueryScreens(3)       |
| XpCreateContext(3)      | XpQueryVersion(3)       |
| XpDestroyContext(3)     | XpRehashPrinterList(3)  |
| XpEndDoc(3)             | XpSelectInput(3)        |
| XpEndJob(3)             | XpSetAttributes(3)      |
| XpEndPage(3)            | XpSetContext(3)         |
| XpFreePrinterList(3)    | XpSetImageResolution(3) |
| XpGetAttributes(3)      | XpSetLocaleHinter(3)    |
| XpGetContext(3)         | XpStartDoc(3)           |
| XpGetDocumentData(3)    | XpStartJob(3)           |
| XpGetImageResolution(3) | XpStartPage(3)          |
| XpGetLocaleHinter(3)    | tps(5)                  |
| XpGetOneAttribute(3)    | tpsconfig(1M)           |
|                         | tpsconvert(1M)          |
|                         | tpsedit(1M)             |
|                         | tpsdocument(4)          |
|                         | tpsjob(4)               |
|                         | tpsprinter(4)           |
|                         | tpsshowmodel(1M)        |

---

## **Known Problems**

### **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`.

## **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 25 megabytes of disk space.

The HP-UX Developer's Toolkit consists of the following product:

X11MotifDevKit

This product contains the libraries and functions which allow you to use X11 R6 Xlib and Xt Intrinsics, OSF/Motif, Imake, and X print extension library.

### **Installation**

To install your software, run the SD-UX `swinstall` command as root:

```
swinstall -i
```

It will invoke a user interface that will lead you through the installation.

For help with `swinstall`, see the *Software Distributor Administration Guide*, available on the Instant Information CD and on the Web:

`docs.hp.com/hpux/os/11i/`

You may also need documentation for other parts of the system, such as networking, system security and windowing.

### **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.so.1`, then use `libA.so.1` for dynamic loading.

### **X11 Release 6 libXt Dependencies**

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

## **Defect Fixes**

### **Patch Releases**

A description of HP-UX patch releases is available on the Web at HP's IT Resource Center:

- US, Canada, Asia-Pacific, and Latin America:

`itrc.hp.com`

- Europe:

`europa.itrc.hp.com`

This information can also be obtained via ftp. 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.

## 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. The latest version of these notes are also available on the Web:

`docs.hp.com/hpux/dev/`

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.

### 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)

### 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

Developer's Toolkit Release Notes for HP-UX 11i Version 1.5  
**Developer's Toolkit Documentation**

Tim O'Reilly. ISBN 1-56592-015-5, O'Reilly & Associates, Inc.

- *Thread Time: The Multithreaded Programming Guide* by Scott J. 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.

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**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.