X Window System, Version 11

Release 6.5.1

Release Notes

August 20, 2000

1. Introductory Note

This document is the release notes that were provided with X.Org's X11R6.5.1 release. The XFree86-specific information in this document is out of date. The XFree86-specific documentation can be found in the **xc/programs/Xserver/hw/xfree86/doc** directory, and on-line at http://www.xfree86.org/current/.

2. What Is X11

X11, or X, is a vendor-neutral, system-architecture neutral network-transparent window system and user interface standard. In other words it's windows for UNIX. But X is not just for UNIX — X runs on a wide range of computing and graphics machines including Macintosh, OS/2, Microsoft's MS-Windows family of operating systems, and almost all of the so-called Network Computers. X can use your network — you may run CPU-intensive programs on high powered workstations and display the user interface (the windows) on inexpensive desktop machines.

3. What is Release 6.5.1

Release 6.5.1 (R6.5.1) is X.Org's update to the Open Group's X Project Release 6.4 patch 3 and all prior releases. It is compatible with with all releases going back to R1 at both the source and protocol levels. Note that Release 6.5 was an internal X.Org release, and Release 6.5.1 supersedes it.

The X Consortium was an independent, not-for-profit membership corporation formed in 1993 as the successor to the MIT X Consortium. It was dissolved at the end of 1996 and all assets such as trademarks and copyrights were transferred to The Open Group. The Open Group's X Project Team was formed to continue maintenance and development of X. The X Project Team was disbanded after Release 6.4 patch 3.

X.Org has employed the services of a third party contractor to establish a CVS repository of the source and a web-based interface for submitting/viewing bug reports. The CVS repository and web-based interface are available to X.Org members. The contractor has been chartered to provide quarterly update releases to the X source.

Membership information for X.Org may be found at http://www.x.org/members.htm.

This X.Org release addresses a portion of the backlog of bug reports since Release 6.4 patch 3, along with additional fixes from the Xfree86 community.

Instructions for building and installing R6.5.1 can be found in the file INSTALL.TXT (INSTALL-X.org), available separately and also contained in the release.

4. Overview of the X.Org Release

Like all the releases that preceded it, R6.5.1 is a source code release. In order to use the release it is necessary to first unpack the distribution, compile it, and then install it. The source contains the following items:

Documentation
Sample implemenations
Fonts and bitmaps
Utility libraries
Programs

5. Supported Operating Systems

This release was built and tested on the following reference platforms:

Compaq Tru64 UNIX V5.0
HPUX 10.20
Solaris 7.0

6. Supported Graphics Devices

This release includes the necessary device-dependent support to build a native X server for the following platforms:

HP-UX: Xhp
Compaq Tru64 UNIX: Xdec on DECstation 3000/400 (Alpha) with PMAG-B
SunOS/Solaris: Xsun — see the Xsun man page for supported cards
XFree86: See the XF_* man pages for supported cards

In addition to the above, the Xvfb and Xnest servers can be built on all platforms.

Native X servers are not built on AIX, Fujitsu UXP, IRIX, or Microsoft Windows NT.

7. The Source Tree

The source is distributed in UNIX tar files. The source unpacks from the tar files into a source tree, and the name of the base directory of the source tree is **xc**. The name **xc** as the base of the source tree has been retained from the X Consortium releases.

The general layout under **xc/** is as follows:

config/	imake config files, *imake*, *makedepend*, etc.
doc/	all documentation other than per-program manual pages
fonts/	BDF, Speedo, Type1 fonts
include/	common include files
lib/	libraries
nls/	national language support files
programs/	all programs, including the X server and *rgb*,
util/	*patch*, *compress*, other utilities
bug-report	bug reporting template
registry	X Registry

8. X Registry

A registry of certain X-related items is maintained to aid in avoiding conflicts and to aid in sharing of such items. The registry is in the file **xc/registry**.

9. Extensions Supported

Release 6.5.1 includes source for the following extensions: BIG-REQUESTS, DOUBLE-BUFFER, DPMS, Extended-Visual-Information, LBX, MIT-SHM, MIT-SUNDRY-NONSTANDARD, Multi-Buffering, RECORD, SECURITY, SHAPE, SYNC, TOG-CUP, X3D-PEX, XC-APPGROUP, XC-MISC, XFree86-VidModeExtension, XIE (X Image Extension), XINERAMA. XInputExtension, XKEYBOARD, XpExtension (printing), XTEST, and XTestExtension1,

Not all of these extensions are standard; see the Standards manual page. Some of these extensions may not be supported on every platform.

10. Implementation Dependent Parameters

Some of the specifications define some behavior as implementation-dependent. Implementations must document how those parameters are implemented.

The default values in this release of the implementation dependent parameters are:

XFILESEARCHPATH default:

This default can be set at build time by setting the *imake* variables XFileSearchPathDefault, XAppLoadDir, XFileSearchPathBase, and ProjectRoot in **xc/config/cf/site.def**. See **xc/config/cf/README** for instructions and **xc/config/cf/X11.tmpl** for details of how these configuration variables are used.

By default the imake variable ProjectRoot is **/usr/X11R6.5** and XFILESEARCHPATH has these components:

$ProjectRoot/lib/X11/%L/%T/%N%C%S
$ProjectRoot/lib/X11/%l/%T/%N%C%S
$ProjectRoot/lib/X11/%T/%N%C%S
$ProjectRoot/lib/X11/%L/%T/%N%S
$ProjectRoot/lib/X11/%l/%T/%N%S
$ProjectRoot/lib/X11/%T/%N%S

XUSERFILESEARCHPATH default:

If the environment variable XAPPLRESDIR is defined, the default value of XUSERFILESEARCHPATH has the following components:

$XAPPLRESDIR/%L/%N%C
$XAPPLRESDIR/%l/%N%C
$XAPPLRESDIR/%N%C
$HOME/%N%C
$XAPPLRESDIR/%L/%N
$XAPPLRESDIR/%l/%N

$XAPPLRESDIR/%N
$HOME/%N

Otherwise it has these components:

$HOME/%L/%N%C
$HOME/%l/%N%C
$HOME/%N%C
$HOME/%L/%N
$HOME/%l/%N
$HOME/%N

XKEYSYMDB default:
Defaults to *$ProjectRoot*/**lib/X11/XKeysymDB**.

XCMSDB default:
Defaults to *$ProjectRoot*/**lib/X11/Xcms.txt**.

XLOCALEDIR default:
Defaults to the directory *$ProjectRoot*/**lib/X11/locale**. The XLOCALEDIR variable can contain multiple colon-separated pathnames.

XErrorDB location
The Xlib error database file is *$ProjectRoot*/**lib/X11/XErrorDB**.

XtErrorDB location
The Xt error database file is *$ProjectRoot*/**lib/X11/XtErrorDB**.

Supported Locales
Locales supported by this implementation are in **xc/nls/locale.dir**. The mapping between various system locale names and X locale names is in **xc/nls/locale.alias**. Both files are installed in the default XLOCALEDIR directory, i.e. *$ProjectRoot*/**lib/X11/locale/**).

Supported Input Methods
This distribution does not include source for any input method servers; however Xlib supplies a default built-in input method that supports compose processing in 8-bit locales. Compose files are provided for Latin-1 and Latin-2. The built-in input method can support other locales, given suitable compose files. See **xc/nls/Compose/iso8859-*** for the supported compositions.

The Input Method Server Development Kit (IMdkit) is at ftp://ftp.x.org/pub/unsupported/lib/IMdkit/.

11. What is Unchanged in Release 6.5.1

As this is an update release, there is a great deal of stability in the standards, libraries, and clients. No existing standards have changed in a material way. All previous interfaces in these and all other libraries are unchanged.

12. New OS Support

The following table shows the versions of the operating systems that were used to develop this and prior releases:

System	R6	R6.1	R6.[23]	R6.4	R6.5.1
AIX	3.2.5	4.1.4	4.2	4.2	–
A/UX	3.0.1	–	–	–	–
BSD/386	1.0	–	–	–	–
Compaq Tru64 UNIX	1.0/1.3	3.2C	4.0A	4.0A	5.0
FreeBSD	–	2.1.0	2.1.6	2.2.2	–
Fujitsu UXP	–	–	–	V20L10	–
HP-UX	9.1	10.01	10.01	10.20	10.20
IRIX	5.2	5.3	6.2	6.2	–
Linux (kernel)					
Slackware 2.3	–	1.2.11	–	–	–
Slackware 3.1	–	–	2.0	–	–
S.u.S.E. 5.0	–	–	–	2.0.30	–
Mach	2.5	–	–	–	–
NEWS-OS	6.0	–	–	–	–
Solaris	2.3	2.4	2.5	2.5	7.0
SunOS	4.1.3	4.1.3	4.1.4	4.1.4	–
Ultrix-32	4.3	4.4	–	–	–
UNICOS	8.0	–	–	–	–
Unixware SVR4.2	1.0	2.02	2.02	–	–
Windows NT	3.1	3.5	4.0	3.51	–

13. Easy Resource Configuration

Setting and changing resources in X applications can be difficult for both the application programmer and the end user. **Resource Configuration Management (RCM)** addresses this problem by changing the **X Intrinsics** to immediately modify a resource for a specified widget and each child widget in the hierarchy. In this context, immediate means: no sourcing of a resource file is required; the application does not need to be restarted for the new resource values to take effect; and the change occurs immediately.

The main difference between **RCM** and the **Editres** protocol is that the **RCM** customizing hooks reside in the **Intrinsics** and thus are linked with other toolkits such as Motif and the Athena widgets. However, the **EditRes** protocol requires the application to link with the **EditRes** routines in the Xmu library and Xmu is not used by all applications that use Motif.

Easy Resource Configuration is not a standard part of the X Toolkit Intrinsics (libXt). It is neither an X Consortium standard nor an X Project Team specification.

14. ANSIfication

R6.1 was officially the last release that supported traditional K&R C. Like R6.3 and R6.4, R6.5 assumes a Standard C compiler and environment. We have not intentionally removed any K&R C support from old code, and most of the release will continue to build on platforms without an ANSI C compiler.

15. VSW5

We have tested this release with VSW5 version 5.0.0. This release passes all tests in VSW5 with the following exceptions:

- tests for which a permanent waiver has been granted.
- tests for which a temporary waiver have been granted.
- tests where a defect in the test has been identified and reported.

VSW licensees may obtain a list of waivers granted from http://www.rdg.opengroup.org/interpretations/database/.

16. XtAppPeekEvent() behavior

XtAppPeekEvent() has been modified in R6.5.1 to behave as it is documented in the Xt spec. The routine will now process timer events without returning to the caller. However, there are applications which rely on the previous behavior of XtAppPeekEvent(). One such application is Netscape, as of version 4.7.

To allow these applications to work with R6.5.1, the environment variable XTAPPPEEKEVENT_SKIPTIMER can be set to any value prior to starting the application. If the environment variable is set, XtAppPeekEvent() will revert to its previous behavior. For example, the following shell commands

```
export XTAPPPEEKEVENT_SKIPTIMER=1
/opt/netscape/netscape
```

can be used to make Netscape function properly with R6.5.1.

17. Year 2000 (Y2K) Compliance

For a statement of compliance see http://www.camb.opengroup.org/tech/desktop/faq/y2k.htm

18. Security Considerations

On UNIX and similar operating systems there are serious security implications associated with running suid-root programs.

By default the xterm terminal emulation program is installed suid-root in order to be able to update utmp or utmpx entries. All the known (as of this writing) exploitable security holes in the X libraries have been eliminated — making it theoretically safe for xterm to be suid-root. For additional security you may install xterm without suid-root; however if you do, xterm will not be able to make utmp or utmpx entries.

On many Intel-based machines the X server must have root privileges in order to access the graphics card and open other devices. The easiest way to grant the requisite privileges is to use xdm to run your X server. Some people, who prefer not to use xdm, often work around the need for the X server to run with root privileges by making their X server a suid-root program. While all the known (as of this writing) exploitable security holes in the server have been eliminated, it is still recommended that you **not** make your X server suid-root. There are *safe* suid-root wrapper programs available (but not in this release) that you can use to start your server if you don't want to use xdm.

19. Filing Bug Reports

If you find a reproducible bug in software built from the source in this distribution or find bugs in its documentation, please complete a bug-report using the form in the file **xc/bug-report** and send it to:

mailto:xbugs@x.org

Please try to provide all of the information requested on the form if it is applicable; the little extra time you spend on the report will make it much easier for someone to reproduce, find, and fix the bug.

Bugs in the contributed software that is available on the net are not handled on any official basis. Consult the documentation for the individual software to see where (if anywhere) to report the bug.

20. Acknowledgements

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Table of Contents

1. Introductory Note 1
2. What Is X11 1
3. What is Release 6.5.1 1
4. Overview of the X.Org Release 1
5. Supported Operating Systems 2
6. Supported Graphics Devices 2
7. The Source Tree 2
8. X Registry 3
9. Extensions Supported 3
10. Implementation Dependent Parameters 3
11. What is Unchanged in Release 6.5.1 4
12. New OS Support 5
13. Easy Resource Configuration 5
14. ANSIfication 5
15. VSW5 6
16. XtAppPeekEvent() behavior 6
17. Year 2000 (Y2K) Compliance 6
18. Security Considerations 6
19. Filing Bug Reports 7
20. Acknowledgements 7