Xlib and X Protocol Test Suite
Release 1.2

Release Notes for the X Test Suite

July 1992

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1. Acknowledgements

The X Test Suite was produced by UniSoft Group Limited under contract to the MIT X Consortium.

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2. Introduction

This release of the X Test Suite tests sections 2 to 10 of the *Xlib: C Language X Interface (MIT X Consortium Standard - X Version 11, Release 4)*[1]. It also tests parts of the *X Window System Protocol (MIT X Consortium Standard - X Version 11)* where these cannot be inferred from tests at the Xlib level.

The X Test Suite may be used to test later versions of X11. The test suite is known to build correctly using the X11R5 Xlib distributed by MIT. However, only R4 functionality is tested; new interfaces and functionality introduced in later releases are not tested.

3. Installation

The distribution normally comes a single tar file, either on tape or across a network. Create a directory to hold the distribution, `cd` to it, and untar everything from that directory. For example:

mkdir *sourcedir*
cd *sourcedir*
tar xfp *tar-file-or-tape-device*

If you have obtained compressed and split tar file over the network, then the sequence might be:

cat xtest.?? | uncompress | (cd *sourcedir*; tar xfp -)

The *sourcedir* directory you choose can be anywhere in any of your filesystems that is convenient to you.

The X Test Suite requires about 10Mb of disk space to unpack the sources, and perhaps 50-100Mb of disk space to build space-saving executable files (dependent on machine architecture). If you choose to build standard executable files you will require perhaps 100-250Mb of disk space. See the User Guide for build instructions.

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[1] The X Window System is a trademark of the Massachusetts Institute of Technology.
X Window System Version 11 Release 4 is abbreviated to X11R4 in this document.
X Window System Version 11 Release 5 is abbreviated to X11R5 in this document.

4. Documentation

The following documentation is provided for the X Test Suite. To format the .mm files, you need the utilities `soelim`, `tbl`, and `nroff/troff` with the mm macros. The file xtest/doc/Makefile contains rules showing how to use these utilities to format and print the documents.

1. The User Guide gives enough information to enable an experienced test suite user, (not necessarily familiar with the X Window System) to configure, build and execute the X Test Suite, and analyse the results produced.

   You can find the source of the User Guide in the file xtest/doc/userguide.mm, and in PostScript form in file xtest/doc/userguide.ps.

2. The Programmers Guide gives enough information to enable an experienced programmer familiar with the X Window System to modify or extend the X Test Suite.

   You can find the source of the Programmers Guide in the file xtest/doc/progguide.mm, and in PostScript form in file xtest/doc/progguide.ps.

3. A paper distributed in the old T7 X test suite, "An Approach to Testing X Window System Servers at a Protocol Level", is included in this release. This is a technical paper which defines in outline terms the areas of the X Window System server which should be tested at the X Protocol level rather than the Xlib level.

   The approach recommended in this paper, and adopted in the design of the T7 X test suite, has been maintained in this X Test Suite. The paper explains the choice of test cases and division of tests between the X Protocol tests and Xlib tests. This paper has been left "as is"; as a result, some sections of this paper are out of date in that they refer to development schedules for a previous software development project.

   You can find the source of this paper in the file xtest/doc/paper.mm.

5. Portability

The main portability limitations occur in the TET which is described further below. This is because the TET was originally developed to run on systems which are POSIX.1[2] compliant.

To enable the X Test Suite to build easily on BSD4.2 systems, a portability library has been developed which contains POSIX.1 functions not present on vanilla BSD4.2 systems. The contents and use of this library are described further in the User Guide. Beyond this, non-POSIX systems may require some porting effort dependent on the number of commonly supported functions which are absent in a particular implementation.

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[2] IEEE Std 1003.1-1990, *Portable Operating System Interface for Computer Environments*

Maintenance and enhancement of the portability library is a low priority for the MIT X Consortium.

It should be possible to build and run this test suite against any R4 or later Xlib and X server. However, to build and execute the complete set of tests, your X server must support the XTEST protocol extension and you need the library interface to this extension. This extension is not part of R4 or R5; it was developed after R5 was released. The extension is not included in this distribution, and had only been released to members of the X Consortium at the time this distribution was released. It is expected that the extension will be released to the public sometime in the future (before R6).

It is also possible to configure the test suite to use an Xlib internal function to obtain raw connections to the X server. The interface to this function was revised after R5 was released in order to provide an adequate interface for this test suite. The Xlib changes for this had only been released to members of the X Consortium at the time this distribution was released. It is expected that these changes will be released to the public sometime in the future (before R6).

6. Status of the Test Environment Toolkit (TET)

Included in this release is a version of the "Test Environment Toolkit" (TET). This is required to build and execute the X Test Suite. The "Test Environment Toolkit" is a software tool developed by X/Open, UNIX International, and the Open Software Foundation.

1. The X Test Suite includes a copy of TET version 1.9 with a small number of changes described below.
2. The supplied version of TET includes fixes to several bugs reported since the TET 1.9 release.
3. The Makefiles supplied with TET 1.9 have been modified slightly to use the build configuration scheme used by the X Test Suite. This reduces the need to edit Makefiles to modify configuration variables when building the TET.
4. You should only refer to the instructions in the User Guide for the X Test Suite for details of installation of the TET.

   For more complete information on the features of the TET, you can format and print the on-line documentation for the TET (see "TET Documentation").
5. It is intended that the X Test Suite should work in conjunction with future versions of the TET later than 1.9.

   You can obtain the latest released version by sending electronic mail to infoserver@xopen.co.uk. A message body of

   ```
   request: tet
   topic: index
   request: end
   ```

   will obtain the index of files available for the TET.

7. TET Documentation

You need only refer to the instructions in the User Guide for the X Test Suite for details of installation and usage of the TET.

For more background information on the features and scope of the TET, you can format and print the following items of documentation which are part of the TET.

Any conflict between this documentation and the User Guide for the X Test Suite is unintentional. You should assume the User Guide is correct in case of conflict, because it has been checked against the X Test Suite.

1. The release note for TET 1.9 is supplied in the file tet/doc/posix_c/rel_note.mm, and in PostScript form in file tet/doc/posix_c/rel_note.ps.

   To format rel_note.mm, you require the utilities `tbl`, and `nroff/troff` with the mm macros.

2. A manual page for the `tcc` utility is provided in file tet/doc/posix_c/tcc.1.

   To format the man page, you require the utility `nroff/troff` with the man macros.

8. Filing bug reports

If you find a reproducible bug in the software or documentation, please send a bug report to MIT using the form in the file bug-report and the destination address:

xbugs@expo.lcs.mit.edu

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 us to reproduce, find, and fix the bug. Receipt of bug reports is generally acknowledged, but sometimes it can be delayed by a few weeks.

This test suite will report numerous bugs in the public R4 and R5 distributions from MIT, and in some cases will cause the X server to crash. In general, it is not necessary to report bugs in the MIT Xlib and X server software found by running this test suite to MIT. The test suite is used extensively at the X Consortium, and at the time of this release nearly all bugs reported by this test suite when running on monochrome and 8-bit color systems (as well as some 12-bit and 24-bit systems) have been corrected in the sources maintained at MIT. However, if you discover bugs that you think will not show up on systems tested at MIT, feel free to report them.

Bugs in TET/tcc software and documentation should not be reported to MIT. Send TET/tcc bug reports to tet_support@xopen.co.uk.

9. Setting up your X server

Your attention is drawn to section 7.1 of the User Guide entitled "Setting up your X server". You should follow the guidelines in section 7.1.1 to obtain reliable, repeatable results against your X server, when running formal verification tests.

It is also important to ensure that your X server is running no other clients before starting formal verification tests. This is because some test programs (for example, those which enable access control) may interfere with later tests unless the X server resets in between.

To ensure the X server resets after each test program, make sure you are not running any other clients at the time.