Extended Operating System Loader

User manual for XOSL 1.1.1

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1. Introduction

Extended Operating System Loader (XOSL) is the world s only full-featured free boot manager, with a real, easy-to-use and full-blown graphical user interface.

Extended Operating System Loader is an absolutely free boot manager and comes with **ABSOLUTELY NO WARRANTY**. XOSL is distributed under the terms of the GNU General Public License (GPL). The source code of the entire XOSL project is freely available at the official XOSL web site: http://www.xosl.org

For XOSL a general discussion list exists. This list is the preferred place to send your questions, comments, bug reports, etc, but feel free to mail me personally at geurt@xosl.org. New releases of XOSL are announced in the general discussion list and in the announcement only list. See the reference section on how to join either list.

Before posting any questions regarding XOSL, make sure you have read this manual. This document covers XOSL version 1.1.0.

For the latest information on the ongoing development of XOSL, refer to http://www.xosl.org or join the general discussion list.

2. General Information

2.1 Features overview

2.1.1 Look & Feel

" User-friendly Graphical User Interface
" Full windowing system with mouse and keyboard support
" Resolutions up to 1600x1200
" Double buffered graphics for smooth drawing
" Limited linear frame buffer support
" Mouse type can be changed on the fly
" Configurable mouse speed
" A set of color schemes
" Several color adjustment options
" Password protected boot configuration and settings
" Restart/Reboot/Shutdown
...and more...

2.1.2 Booting Features

" Up to 23 boot items
" Full hiding/revealing support for partitions with Microsoft file systems
" Storing additional keys
" Activate partitions (one per system or one per HD)
" Automatic booting (with timeout) of selected boot item (Instant boot)
" Auto boot last operating system
" Password protection per boot item
" Boot master boot record on second HD
" Boot DOS/Windows 9x on second HD
" Auto reveal partitions on startup
" Hotkey per boot item
" Support for hard disks larger than 8Gb
" Coexist with virtually any other boot manager **[new]**
...and more...

2.1.3 XOSL is known to support

" MS-DOS
" Linux (with Lilo)
" Solaris [new]
" VxWorks 5.x
" Windows 9x
" Windows NT 4.0
...and others...

2.2 XOSL loading failure handling

XOSL is loaded in three steps. First the Initial Program Loader (IPL) is loaded and executed. The IPL resides in the Master Boot Record (MBR). The IPL will load the XOSL loader, which will print Extended Operating System Loader 1.1.0a . The XOSL loader will load the actual boot manager. The IPL cannot instantly load the actual boot manager due to its heavy code size restrictions.

When the XOSL loader cannot load the boot manager, or the boot manager itself cannot load one of the data files, an error message is displayed, and the system will automatically switch to XOSL Bypass mode. When the IPL fails to load the XOSL loader, the system is halted. A key press will reboot the system. No error message is displayed (again due to the code size constraints). In all these cases, reinstalling XOSL is required.

2.3 Fail-safe operation

Currently XOSL is by far not fail-safe. A majority of files is assumed to exist, and XOSL will just crash if they are missing. Also not all limits are absolute. For instance, XOSL supports up to 92 partitions, if more exist (highly unlikely), XOSL will lock up.

2.4 XOSL after re-partitioning

When partitions are added or removed, XOSL will be started correctly. XOSL will check all items and update the hide/reveal list.

After re-partitioning your system, make sure you check:

" The correctness of each boot item.
" Check -for every boot item- if hide/reveal is still correct.

2.5 Boot failure

When a boot item cannot be booted, a message box is displayed with an error message. After it is closed, XOSL will continue to run. Booting failure is only detected when the data cannot be read, for instance, the floppy disk drive is empty when trying to boot a floppy disk.

3. Installation

At the time, two different downloads are available at the download area of the XOSL web site. Depending on what platform you have available, you have to decide which one suits you best. The install utility is currently implemented for the following platforms:

- MS-DOS/Windows 9x
- Other

If you want to have XOSL installed on a FAT16/FAT32 partition, you have to download the MS-DOS / Windows 9x version.

3.1 System Requirements

Minimal system requirements:
- 80386 or better with 4Mb of RAM (6Mb for 1280x1024/1600x1200)
- VESA VBE 1.2 compliant display controller
- 300kb of free disk space

Recommended:
- Pentium 100 or better
- VESA VBE 2.0 compliant display controller
- PS/2 or serial mouse

3.2 Before installing XOSL

Installing a boot manager, in general, is a dangerous thing. If -for whatever reason- the installation of the boot manager fails, there is a good chance your system will not boot at all anymore. So before you install a boot manager, backup all important files on your hard disk, and make sure you have a boot floppy. If you do not have the experience to recover your system after a severe system crash, it is advisable to let someone else who does know install XOSL for you.

NOTE: If you already have a version of XOSL installed, and do not want to upgrade to XOSL 1.1.0, but want to have a clean install of XOSL 1.1.0, make sure you uninstall the previous version **before** you install. You can use the uninstall option of the install utility of XOSL 1.1.0.

3.3 Installation for MS-DOS / Windows 9x users

Download the xoslfat.zip file at the download area on the XOSL web site, and unzip it in a separate directory. From plain MS-DOS, run INSTALL.EXE and follow the displayed instructions. **Do not** install XOSL from an MS-DOS box in Windows. Although XOSL should install fine, the install utility might not detect your hardware correctly (namely display adapter and mouse).

Advisable is to install XOSL from a floppy (preferable a boot disk). If install fails, or XOSL won't run after reboot, you can still uninstall it. This is especially the case when you install XOSL on a dedicated partition. Installing XOSL on a dedicated partition will destroy all

existing data on this partition. If you have installed XOSL from a floppy on a dedicated partition, you can still fully uninstall it with the install utility, including a full restore of the partition data.

3.4 Installation users of other operating systems

Make sure you have a separate partition, which is at least 300k in size. The location of this partition and the file system type is irrelevant. The installation program will automatically change the file system type to 0x78. If this is not wanted, you are free to change it in whatever number you like after install is finished.

WARNING All data on this partition will be destroyed.

Download the xoslsep.zip file at the download area of the XOSL web site and unzip it in a separate directory. Insert a formatted floppy in your floppy drive, and raw-write xoslimg.bin onto the floppy. All data on this floppy will be erased.
To write the image to the floppy, execute:

- DOS: rawrite xoslimg.bin a:
- Linux/Unix: dd if=xoslimg.bin of=/dev/fd0

Reboot from the floppy disk and follow the displayed instructions.

NOTE: rawrite.exe is included in the xoslsep.zip file.

NOTE: the created floppy will contain an installation of FreeDOS. This version of FreeDOS is **extremely** slow with floppy disk access, so do not interrupt install if it takes longer than it is to expect.

3.5 XOSL after installing an operating system

If you install an operating system while you have XOSL installed, it may happen that XOSL is not started anymore. Instead, the new operating system is booted directly. This typically happens after installing a Microsoft operating system. To get XOSL running again, use the **Restore** feature of the XOSL Install Utility.

4. XOSL Preference

This section provides information on the **XOSL Preference** window, which is displayed by clicking on the **Preference** button.

4.1 Graphics

Because most display controller are configured differently, XOSL uses the VESA VBE 1.2 real-mode standard, extended with a view VBE 2.0 features (for instance: (limited) frame buffer support). The graphics driver created for XOSL should operate fine with all VESA VBE 1.2 compliant display controller.

Some later version of XOSL will feature a driver that will be fully compliant with version VBE 1.2, VBE 2.0 (including full linear frame buffer support) and VBE 3.0 (including refresh rate options).

4.1.1 Screen area

XOSL supports five different graphics modes: 640x480, 800x600, 1024x768, 1280x1024 and 1600x1200. This last mode is not a video mode defined by the VESA standard. Because of this, XOSL will determine the metrics of every VESA graphics mode it found. Note also that even if you display controller does have support for 1600x1200, it might not be implemented for the VESA standard, which means XOSL cannot use it.

Before switching to a different video mode, it is advisable to first test whether or not the video mode is supported by the monitor. If the monitor does not support the mode, the graphics will not be displayed correctly, and it may even damage the monitor. With XOSL 1.1.0 you can only select video modes supported by the display controller.

4.1.2 Visual Effects

Show window contents while dragging
When enabled, the content of a window is visible while dragging it over the screen. When disabled, only a frame will be visible. This option should only be used with fast machines on which the linear frame buffer option is supported. It may not work on slower machines, due to the fact that interrupts are not handled while in protected mode. This means that at the time the graphics are drawn the mouse is ignored. This will be solved in later releases.

Use 9-point font
XOSL provides two different font sizes. The default font size is 10 points. On systems running in lower video modes (800x600) or larger monitors (17"+), 9 points font may result in better graphics.

Invert mouse cursor color
XOSL provides two different mouse cursor colors. Default is a white cursor with a black border. Inverted is a black cursor with a white border.

Use wallpaper
XOSL currently provides one wallpaper. When enabled the wallpaper is drawn, when

disabled the background color is drawn. Whether you should use the wallpaper or not entirely depends on what you like. Using a wallpaper will not slow down the system in anyway, except that initialization will take longer (probably not noticeable).

4.1.3 Enhancement

Use linear frame buffer
When the linear frame buffer option is used, performance is increased. This is only available on video adapters with VBE version 2.0 or higher. It is also necessary that the video adapter supports linear frame buffer in any graphics mode and not only in specific linear frame buffer modes. Therefore this option will not work on all VBE2.0+ systems (e.g. Tseng Labs ET6000). This will be solved in later releases. When the linear framer is not supported, this option is disabled.

4.1.4 Personal

Disable fade-in
When enabled, the fade-transition from the splash screen to the boot manager screen will be skipped.

Disable fade-out
On default XOSL will do a fast fade-out (screen fades to black) when the boot button is clicked. Because it takes a noticeable amount of time, it is possible to disable fade-out.

4.2 Color settings

4.2.1 Color schemes

XOSL provides a set of color schemes. These are closely related to the color schemes found in Microsoft Windows 9x/NT 4.0. The color of individual sections of windows can t yet be changed.

4.2.2 Color adjustment

In addition to the color schemes, XOSL provides some additional color changing features. The Hue, Saturation and Luminance of the entire screen can be changed.

- Hue determines the color value on a 360-degree wheel.
- Saturation determines the distance to the gray-color. When set to -100%, the entire screen is gray-scaled.
- Luminance determines the brightness of the screen. When set to -100% the entire screen will be black and when set to +100% the screen will be white. In XOSL Luminance ranges from -80% to +80%.

4.2.3 Fade-in color

This option will change the intensity of the fade-in color. 0% will make it black, 100% will make it white.

4.3 Mouse settings

4.3.1 Mouse type

XOSL currently supports two mouse types:
" serial mouse (COM1-4)
" ps/2 mouse

It is also possible to disable the mouse (select None) and operate XOSL with keyboard only. Mouse usage is highly recommended.

4.3.2 Mouse speed

For both serial and PS/2 mice, the mouse speed can be changed. Ten different speed settings are available, although just five of them or used for PS/2 (1st, 3rd, &). When set to the highest speed it is possible that moving of windows (namely when the window contents is shown while dragging) is performed incorrect. This means that the system is not fast enough. The speed should be set to a lower value. This will be solved in later version.

4.3.3 PS/2 sampling rate

With PS/2 mice, it is possible to set the sampling rate. The sampling rate ranges from 10 to 200 samples per second. By default it is set to 100 samples per second. Sampling rate does not affect the speed of the mouse cursor, it has only affect on the smoothness of moving the cursor.

Seven different sampling rates are available:
10 20 40 60 80 100 200

4.4 Password protection

XOSL provides password protection for opening the **XOSL Boot item configuration** and **XOSL Preference** windows. This way it is only possible for the 'administrator' to change settings. When the password is set, XOSL will ask for it when either clicking the **Setup** or the **Preference** button. An opened window is not protected.

4.5 Miscellaneous

4.5.1 Miscellaneous keys

To assign a hotkey, select the specific edit box and hit the key or key-combination you want to assign. If nothing happens, the hotkey is not supported (for instance F12').

Cycle windows
This hotkey is used to cycle through the open windows. Thus pressing this key (combination) will activate the next open windows. The default hotkey is Alt-W.

Restart XOSL
By pressing this hotkey, XOSL will restart. Why you want to restart may have different reasons, for instance: you have selected an video mode not supported by your monitor. The default hotkey is F10.

Cold reboot
Your system will perform a cold reboot when this key is pressed. The default hotkey is Alt-F10.

Shutdown
When this hotkey is pressed, XOSL will be terminated and when selected, power-off your system.

Soft power off
This feature is still experimental and is therefore disabled on default. When enabled, XOSL will try to power-off your system when the **shutdown** hotkey is pressed. Note that even if your system has full support for soft power-off, XOSL might not support it.

4.5.2 Boot handling

Display boot item index
When enabled, the index (1, 2, ...) of each boot item will be displayed in front of the boot item name on the main window.

Boot on keypress
When enabled, a boot item is instantly booted when its index hotkey is pressed. When disabled, the boot item is only selected. Then you have to press enter to boot it.

Allow active partition per HD
When enabled (default), XOSL will allow **one** active partition per fixed disk. When disabled, XOSL will allow only **one** activate partition in your entire system.

Reveal partitions on start-up
When enabled, all hidden partitions will be revealed when XOSL is started. Whether these hidden partitions were hidden by XOSL or by a partitioning program does not matter. XOSL will always reveal **all** hidden partitions.

Clear screen before booting
Normally, when XOSL boots, it will restore the text screen as it was before XOSL was started. When this option is enabled, XOSL will clear the screen instead.

4.5.3 Instant boot

Ignore mouse click
When enabled and instant boot is enabled, a mouse click will not abort instant boot. As a matter of fact, all mouse clicks will be ignored until first a key is pressed. This feature is included as work-around. Use it only when it looks as if setting a time-out for instant boot has no effect (the specified boot item is booted instantly). The actual problem lies in the (serial) mouse driver. This problem will be solved in a later release.

Auto boot last boot item
When enabled, XOSL will automatically boot (with time-out) the boot item that was last booted. It is set as **Instant Boot.**

5. XOSL boot items configuration

This section provides information on the **XOSL Boot Item Configuration** window, which is displayed by clicking on the **Setup** button.

5.1 Add and update

At the **Partition** section, boot items can be added to the boot items list. **Update** is intended for changing the name or the partition of an existing boot item.

XOSL also provides the ability to boot the master boot record (MBR): the first sector of a hard disk. In the partition list, for every hard disk a master boot record is shown. Note that the first master boot record (MBR of HD0) is the master boot record as it was **before** XOSL was installed. See also section 6.4.

5.2 Hiding and revealing

XOSL provides the possibility to hide and reveal partitions with Microsoft file systems only. When you hide a partition for a certain boot item, it is not restored the next time XOSL is started, unless the **Reveal partitions on start-up** options is enabled (**XOSL Preference**/**Misc**). When disabled, you have to reveal partitions explicitly for the other boot items. To simplify this process, the **Reveal all** button exists. Then all Microsoft partitions (for the specified boot item) are marked revealed automatically.

Supported partition types for hiding:

01 - FAT12
04 - FAT16 <= 32Mb
06 - FAT16 > 32Mb
07 - NTFS[1]
0b - FAT32
0c - FAT32 LBA
0e - FAT16 LBA
0f - Extended LBA

5.3 Miscellaneous

5.3.1 Instant boot

One of the boot items can be set to **Instant boot**. This will then be the default option and is automatically booted the next time the XOSL is started. When the instant boot timeout value is set, XOSL will wait the specified amount of seconds before the boot item is booted. The timeout can be up to 15 minutes

[1]This means it is also possible to hide HPFS.

NOTE: when timeout is set to 0 seconds, and you do not want to boot the default boot item, just press the Escape key when the splash screen is displayed.

5.3.2 Additional keys

With XOSL it is possible to store specified keys in the keyboard buffer before an operating system is loaded. Pressing the key on the keyboard is then simulated. Up to 15 keys can be stored in the keyboard buffer (BIOS limit). The use of this option is to let XOSL control for example the Windows startup menu.

There are some additional key sequences, which makes it possible to store e.g. function keys. C/C++ programmers will be familiar with the notation:

Sequence	Value	Char	Description
\a	0x07	BEL	Audible bell
\b	0x08	BS	Backspace
\f	0x0c	FF	Formfeed
\n	0x0a	LF	Newline (linefeed)
\r	0x0d	CR	Carriage return
\t	0x09	HT	Tab (horizontal)
\v	0x0b	VT	Vertical tab
\\	0x5c	\	Backslash
\U	0x4800		Cursor up
\D	0x5000		Cursor down
\L	0x4b00		Cursor left
\R	0x4d00		Cursor right
\F1	0x3b00	F1	Function key 1
\F2	0x3c00	F2	Function key 2
\F3	0x3d00	F3	Function key 3
\F4	0x3e00	F4	Function key 4
\F5	0x3f00	F5	Function key 4
\F6	0x4000	F6	Function key 6
\F7	0x4100	F7	Function key 7
\F8	0x4200	F8	Function key 8
\F9	0x4300	F9	Function key 9
\F10	0x4400	F10	Function key 10
\F11	n/a	F11	not supported
\F12	n/a	F12	not supported

With any other combination the backslash (\) is ignored

5.3.3 Hotkey

Every boot item can have its own hotkey. To assign a hotkey, select the edit box and hit the key or key-combination you want to assign. If nothing happens, the hotkey is not supported (for instance F12').

5.3.4 Password protection

Every separate boot item can have its own password, although it is advised to keep the number of password as small as possible. To remove a password, just blank both the **Password** and the **Re-enter password** fields and click on the apply button.

5.3.5 Activating partitions

Many operating systems need to reside on an active partition. Therefore it is possible to activate a partition. With XOSL it is possible to activate any partition on any HD.

5.3.6 Fix FAT drive number

By default, when you create a FAT partition, the drive number set in the boot record will be 0x80 (stands for first HD). Even if the partition is on any other HD, it will be number 0x80. This is what prevents booting any operating system developed by Microsoft installed on HDs other than the first.

When this option is enabled, XOSL will fix the drive number to successfully boot the operating system. Note that you still need to hide all partitions on your first hard disk! XOSL will automatically enable this option when needed.

6. Additional

6.1 Boot manager bypass

In case the XOSL fails to boot, or crashes at a certain point, it is possible to bypass the entire boot manager. That is, the entire boot manager is loaded, but no initialization is preformed.

XOSL is bypassed by depressing both the left and the right Alt and Ctrl keys while the boot manager is loaded.

If loading or initialization of XOSL fails, the boot manager is automatically bypassed.

NOTE: Boot manager bypass is not yet password protected.

6.2 Booting Linux

Because XOSL cannot yet boot Linux directly, you need to have Lilo installed in either the boot record of a (Linux) partition, or in the master boot record of an HD other than the first.

6.2.1 Booting single-kernel Linux systems

As you will notice, when Linux is booted, the Lilo-prompt is still shown. The simplest way to bypass this prompt, and make XOSL boot Linux directly, is to edit the /etc/lilo.conf file, and comment or remove the prompt' line. Now the Lilo prompt will not be shown anymore, and the first item will be booted directly.

6.2.2 Booting multi-kernel Linux systems

By default, Lilo will drain the keyboard buffer on start-up. This way it will not be possible to let XOSL control Lilo through the Additional Keys feature. To make XOSL control Lilo, you have to re-compile Lilo, with NODRAIN defined. This can be done as following:

1. Edit the Makefile, and find the CONFIG line. This line will look something like: CONFIG=-DIGNORECASE -DVARSETUP -DREWRITE_TABLE
2. Add -DNODRAIN to the CONFIG line.
3. Execute make'
4. Replace the existing boot.b (most likely located in /boot/) with the new one.
5. Execute lilo'

If, for instance, you have two options defined in /etc/lilo.conf: LinuxNew and LinuxOld, you can now make XOSL boot these options by defining as additional keys: LinuxNew\n and LinuxOld\n respectively.

NOTE: make sure prompt' is present in /etc/lilo.conf, or else the first item will be automatically booted.

NOTE: this solution of course also works for a single-kernel system.

6.2.3 Multiple Linux distributions

When you have more than one distribution of Linux installed, one of the following two approaches can be used to boot Linux:

- An installation of Lilo per partition/distribution (refer to single-kernel Linux systems)
- One installation of Lilo, controlling all distributions (refer to multi-kernel Linux systems)

6.3 Booting MS-DOS/Windows 9x off the second hard disk

Normally you can only boot a Microsoft OS if it is install on the first HD. This XOSL it is possible to boot MS-DOS or Windows 9x off a HD other than the first.

6.3.1 Background and solution

In the boot record (first sector of the partition) of a FAT file system, an entry exists which holds the drive number. By default the Microsoft format utility sets this to 0x80 (128 decimal). Even if this partition is on the second HD, it is still 0x80 (instead of 0x81 or 129). This prevents booting a Microsoft OS off the second HD.

XOSL solves this problem by fixing the drive number. So if the partition is on the second drive, and drive number entry is set to 0x81. XOSL does not update the boot record on the disk. Instead, after loading the boot record, and before executing it (booting), the drive number is set to the correct value, and MS-DOS/Windows 9x is booted correctly.

6.3.2 Implementation the solution

To boot MS-DOS or Windows 9x installed on the second HD, the following actions need to be performed after adding the boot item

- Check the **Fix FAT drive number** check box at **Setup/Misc** (checked automatically)
- Hide all FAT partitions on the first HD. It is mandatory you do this, or else booting will still fail.

NOTE: if you have installed Windows NT on a FAT partition on the second drive, it should be possible to boot it with XOSL, after performing the above actions. However, this is an assumption. It is not actually tested. Note that you will also have to hide all NTFS partitions on your first drive.

6.4 Installing XOSL together with other boot managers [new]

XOSL provides the **unique** ability to coexist with virtually any other boot manager. Two approaches exist to have XOSL installed together with some other boot manager.

6.4.1 XOSL as primary boot loader

When you install XOSL 1.1.1, it will backup the original Master Boot Record (MBR). In

addition, XOSL provides the ability to boot this original MBR. It is shown in the partition list as the MBR of the **first** hard disk (HD0). When this MBR is booted, the original MBR is booted instead, which can be either a default loader (as after fdisk /mbr), or some boot loader that was installed before XOSL got installed.

XOSL does not backup the original MBR on the first (unused) track of your hard disk (as does XOSL 1.1.0), because that might overwrite some other boot manager that got installed there. Instead, it is copied to a file (ORIG_MBR.XCF).

Finally, XOSL will restore the partition table (as found in the MBR) for this original MBR, thus the original loader will always find the correct partition data.

6.4.2 XOSL as secondary boot loader

If you install XOSL on a **dedicated partition**, you can also boot this partition, which will start XOSL. This way you can use XOSL as secondary boot loader instead: use some other boot manager to boot the XOSL partition.

6.4.3 Additional notes

Some boot managers completely hide partitions (instead of only changing the file system Id). If you use such a boot manager as secondary boot loader, XOSL will still run. Even if its partition is completely hidden. The only problem is that the boot items may get corrupted. This will happen when the partitions of boot items are hidden when XOSL is started. Although they might be restored be the secondary boot loader, they will stay corrupted. This will be solved in the next version of XOSL (1.1.2).

6.5 Unconfirmed hints [new]

This section provides several hints of untested features or hints of users, all of which I either could not get or do not have a confirmation.

6.5.1 XOSL and GoBack

GoBack is a Windows utility which provides the ability to completely undo any changes. For instance, completely uninstall an application, restore documents, etc. The first part of GoBack resides in the Master Boot Record, which means it does not allow you to have a boot manager installed (at least the current version does not). XOSL however provides the ability to coexist with virtually any other boot manager. This should also include GoBack. Refer to section 6.4.1 for details.

GoBack: http://www.goback.com

6.5.2 Booting BeOS

It seems that XOSL cannot directly boot BeOS. However, if you have first installed the BeOS Bootman, XOSL **can** boot it (even though Bootman is overwritten). The reason seems to be that both Bootman and XOSL require that **zbeos** is installed on the BeOS partition. When you install Bootman, **zboes** is automatically installed and can be executed

be booting the boot record of the BeOS partition. So if you first install the BeOS Bootman, and then XOSL, XOSL will be able to boot the BeOS partition directly.

The above assumption is made due to the fact that according to some online FAQ, Lilo also has to execute **zbeos** in order to get BeOS booted.

6.5.3 Install and the Japanese MS-DOS

In order to successfully use the XOSL Install Utility from the Japanese MS-DOS, first execute **us** and then **install**

7. References

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Mark Monciardini,
Designs By Mark (http://www.designsbymark.com)

Mikhail Ranish,
Ranish Partition Manager (http://www.intercom.com/~ranish)

Geurt Vos,
Extended Operating System Loader (http://www.xosl.org)

XOSL general discussion list:
To join, visit: http://www.onelist.com/subscribe/xosl

XOSL announcement-only list:
To join, visit: http://www.onelist.com/subscribe/xosl_announce