Xming

Xming Changes Fonts Trouble? Manual Xmingrc portablePuTTY

Xming X Server

Xming is the leading X Window Server for Microsoft XP/2008/Windows7. It is a fully featured X Server and is lean, fast, current, simple to install and because it is standalone native Microsoft Windows®, easily made portable (not needing a machine-specific installation).

Xming is totally secure when used with SSH and optionally includes an enhanced PuTTY Link SSH client and a portable PuTTY replacement package. Xming can work completely independent of the Window's registry when used with Xming-portablePuTTY.

Mesa with GLX, or Microsoft WGL, provide interactive OpenGL 2D and 3D network transparent graphics rendering. High performance Windows AIGLX is available for graphics cards that support hardware accelerated OpenGL.

Xming is cross-compiled on Linux for Microsoft Windows (32-bit x86), using MinGW, mainly from the canonical X.Org source code with my patches applied. It is kept current and secure with frequent updates from X.Org, XCB, XKB, FreeType2, Pthreads-Win32, Mesa, PuTTY and Freedesktop Bugzilla. X server development is shared with Cygwin/X and merged into the common X.Org XWin DDX codebase. Note: unlike Cygwin/X, Xming doesn't need a Linux API emulation layer.

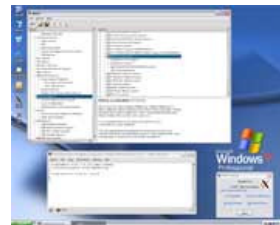When released Public Domain, Xming can be distributed and used without restriction.

Screenshots

-multiwindow mode on Microsoft Windows 7 with five clients including a remote ParaView.

XDMCP on one X server, and an xlogo X client on another.

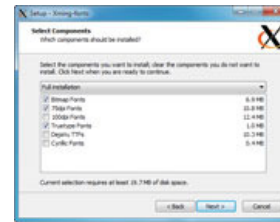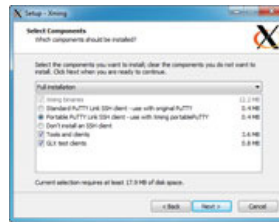Using *-multiwindow* mode to select Linux kernel build options remotely.

Releases

Links and release status

Website Releases	Version	State/Notes	Released	MD5 signatures	Size MB
Xming	7.5.0.45	Website Release	12 Feb 2012	MD5 signatures	4.13
Xming-portablePuTTY	7.5.0.43	Website Release	11 Dec 2011	MD5 signatures	1.63

See Donations for how to obtain a Donor Password.

Public Domain Releases	Version	State/Notes	Released	MD5 signature	Size MB
Xming-fonts	7.5.0.34	Public Domain	28 Feb 2011	3d4f0a19057d00b8de7bb51b0f58f312	30.8
Xming Xming-mesa	6.9.0.31	Public Domain	4 May 2007	4cd12b9bec0ae19b95584650bbaf534a e580debbf6110cfc4d8fcd20beb541c1	2.10 2.50

Website Snapshots	Version	State/Notes	Snapshot	MD5 signature	Size MB
Snapshot Xming	7.5.0.46	Work in progress	21 Feb 2012 19:09	Not yet released	4.14

See Donations for how to obtain a Donor Password.

Installers for 32-bit Windows and ⬤WoW64 (Windows-on-Windows 64-bit)

Xming installers make it child's play to quickly install project components, interactively, with a few mouse clicks. They will also install/uninstall, silently, using command line parameters.

Xming

This essential installer includes the XLaunch wizard. Optional extras are the PuTTY Link for Xming SSH client, Tools and clients and GLX test clients. At least 13.3MB of free disk space is required.

Don't install anywhere other than the default directory unless you **really** know what you are doing, e.g. use directory 'C:\Program Files (x86)\Xming' on 64-bit Windows, and install using right-click 'Run as administrator' if necessary.

A different installer download is not now needed for OpenGL support (Xming used to have two builds and installers; with and without Mesa).

If you intend to use PuTTY: make sure you correctly pick the PuTTY Link SSH client (plink), either for use with standard PuTTY or Xming-portablePuTTY i.e. there are two different plink's in the installer. You should associate XLaunch.exe with the .xlaunch file extension (an installer option, that is enabled by default) to get the X server quickstart feature (i.e. just one click runs Xming, the way you want, via a saved .xlaunch configuration file).

The Xming executable has an absolute minimum of fonts; the so-called built-ins. X clients usually need extra fonts to supplement these...

Xming-fonts

This additional installer provides standard core X fonts (which are usually required) and optional extended Bitstream Vera replacement fonts from ⬤DejaVue. You should install Xming-fonts in the same directory you installed Xming. At least 19.7MB of free disk space is required (for the default selection of fonts).

I separated these fonts from the Xming installer, above, since they have a high installed footprint, don't change very often and modern X applications use client side fonts instead via fontconfig. **Xming-fonts are however needed by traditional X applications e.g. emacs**.

Since these standard X Window fonts tend to be ugly, you could **use better TrueType fonts from your Microsoft system** like this.

Instead of installing Xming-fonts you can use an ⬤X font server on your network by using the Xming *-fp* option like this...

```
 -fp tcp/<IP address or name of font server>:7100
```

Xming-portablePuTTY

This optional installer provides a fully portable replacement for ⬤PuTTY. You don't have to install portablePuTTY in the same directory you installed Xming as it is completely autonomous. At least 3.3MB of free disk space is required.

Xming-portablePuTTY works without requiring access to the Windows registry. The portable plink executable also incorporates the changes from the PuTTY Link for Xming SSH client.

Using Xming

Adept operating systems have X11 ⬤Network Transparency, why not Microsoft Windows?

Note this website convention: Window = X Window   Windows = Microsoft Windows®

What can you use Xming for?

All the normal 🔵X Window Server functions and some you might not have thought of

- Extend the magic of X11 🔵Network Transparency to the ubiquitous Microsoft Desktop. Or to put that simply: 'Project' your favourite remote Linux/Unix application onto a local Windows screen.
- Use your Microsoft computer as a thin client terminal to a remote Linux/Unix machine 🙂.
- Extend server-side X fonts to include any TrueType fonts on your Windows machine. These high quality fonts can be accessed, in situ, and added to the X server font list.
- Use Xming with portablePuTTY as a pocket X server by copying both to a USB flash drive etc. Once made portable; no installed software or access to the Windows registry is needed.
- Use as a 🔵KVM substitute. No need for expensive hardware or a tangle of cables.
- Headless a Linux/Unix machine by removing its keyboard, mouse, monitor and video card. Redirect the BIOS console and then access terminals via minicom (using a serial port) or PuTTY, and GUI's via Xming (using an ethernet).
- You can display remote X clients directly on a Windows Desktop without running a remote Display Manager and so free up the system resources used by that DM. Note however that use of 🔵XDMCP mode needs a remote DM running!
- You can use the Xming X server, just locally, together with 🔵coLinux, 🔵Cygwin, 🔵SFU (Microsoft Services for Unix) / 🔵SUA or 🔵 UWIN.
- Use SSH and X-Forwarding in -*multiwindow* mode, instead of 🔵VNC, to reclaim precious resources (including desktop space) and facilitate cut-and-paste between windows.
- If you want focus-follows-mouse: use Microsoft's PowerToy TweakUI to enable 🔵X-Mouse for -*multiwindow* mode. On Windows 7 this is equivalent: "Ease of Access Center" > "Make the mouse easier to use" > check "Activate a window by hovering over it with the mouse".
- You can run Xming on multiple monitors in many ways, e.g. if you have two monitors on a Windows machine, you could put the full remote Linux/Unix session on the second monitor using

  ```
   >Xming –query <IP address of remote host> –nodecoration –screen 0 @2 –clipboard
  ```

  🔵Xinerama could be used to create one large virtual display, e.g. with two monitors

  ```
   >Xming –query <IP address of remote host> –nodecoration –screen 0 @1 –screen 1 @2 +xinerama –clipboard
  ```

- Configure a Linux kernel on a remote machine, 'make xconfig' i.e. using the convenient GUI method.
- Update remote machines via the distribution's GUI tools e.g. for Mandriva use mcc, rpmdrake and MandrivaUpdate.
- Install the Enlightened Sound Daemon, 🔵EsounD, to have sound with remote X applications.

  ```
     On the Xming machine start
   >esd.exe –tcp –public              Note: this is not secure
     On the remote Linux/Unix machine
   $ export ESPEAKER=<IP address of Xming PC>
  ```

  🔵PulseAudio is an EsounD replacement, free of cygwin1.dll, that can also be used as a sound server. Note: only an old version of PulseAudio is available as a Windows binary and EsounD is no longer developed.
- Xming can be used with external Windows window managers, such as xwinwm (via -*mwextwm*), openbox or *twm* (via -*rootless*). I test *twm* with this script. However using an alternative window manager on the Windows desktop is just daft, use -*multiwindow* mode, run virtual machines or install Linux instead 🙂.

Manuals

Using X servers can be difficult and complex, so if you want to use Xming "quick and easy" start it with XLaunch. The learning curve for seamlessly combining X, Microsoft Windows, SSH and Linux/Unix can be pretty steep for novices. Documentation here just scratches the surface of many topics so be prepared to read more elsewhere and to try options out. Also this documentation is constantly being updated and **may be incorrect for old versions**.

Xming Manual. This doesn't contain any X server commands. You could view these with -*help* or run this XLaunch file. These online 🔵X.Org Manual pages also give more detail on X server and X client options. (Note: not all generic options are logical for Windows or honoured by

Xming.)

Manuals are also available for XLaunch, Xmingrc, portablePuTTY, Xmon, the Run Utility and command line use of Xming's install and uninstall programs. All thirty-eight Tools and clients also have Xming manuals.

To simply start Xming in -*multiwindow* mode, with no access control, from Command Processor (the Windows cmd.exe console)...

```
>"C:\Program Files\Xming\Xming.exe" -ac -multiwindow -clipboard    or on a 64-bit system...
>"C:\Program Files (x86)\Xming\Xming.exe" -ac -multiwindow -clipboard
  Notes: using -ac is TOTALLY UNSAFE and is the idiot's way to simplify use of an X server.
         If you now need a Command Processor: run it from Xming's notification area icon menu.
         Many useful variables will then be inherited e.g. %CD% and %DISPLAY%
```

This gives you a multiwindow X server on display-number 0 (the default), with an integrated Windows window manager, in its easiest to use form. This is as simple as it gets, but is totally **unsafe** (see Access control), so start the X server without using -*ac* and only use X-Forwarding to display remote clients. Note...

- You cannot run two X servers with the same display-number; use the :*display-number* option if you want multiple instances.
- On recent Windows versions: in order to easily use Xming's notification area icon(s) you should set 'Show icon and notifications', for the Xming X Server icon.

If you have installed portablePuTTY or ⬤PuTTY, have a configured SSH server on your remote Linux/Unix machine, and have then used and saved some PuTTY sessions: you could display an xterm like this

```
>Xming :0 -multiwindow -clipboard                     start Xming Server:0.0, then run
>plink -ssh -X -pw <password> <user@host> xterm        either, plink using <user@host>
>plink -pw <password> -load <sessname> xterm           or, plink using a PuTTY saved session <sessname>
  Note: -pw <password> is not recommended for security; pre-empt -pw with PuTTY's pageant key manager
>plink -ssh -X <user@host> xterm                       plink is safer used with an authentication agent
>plink -load <sessname> xterm
```

or use a Windows SSH client, like ⬤Cygwin's OpenSSH, to do the same

```
>Xming :0 -multiwindow -clipboard                     start Xming Server:0.0, then run
>C:\cygwin\bin\ssh -Y <user@host> xterm                ssh using <user@host> (no saved sessions possible)
  Note: pre-empt getting a password/passphrase entry prompt by using keychain and a Cygwin shell
```
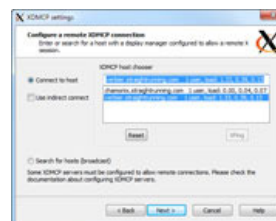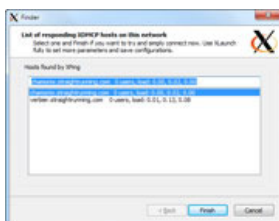
Use *XLaunch -find* if all you want is a simple ⬤XDMCP login to a remote machine.
Also XLaunch makes using Xming with PuTTY's plink and generic Windows ssh clients easy...
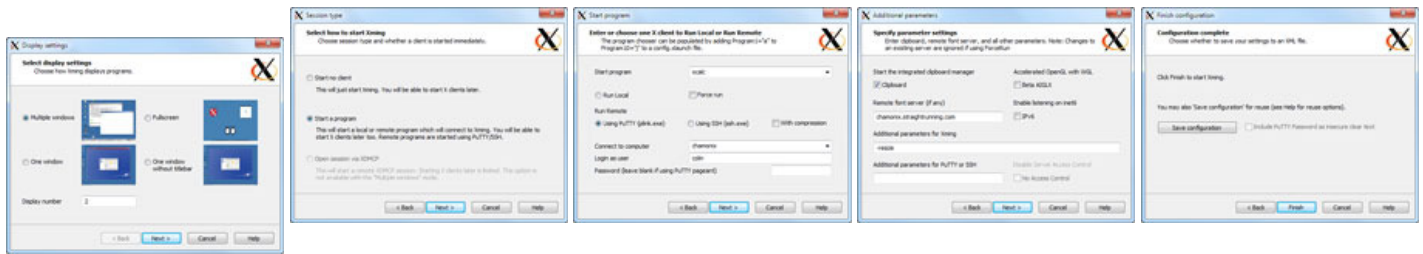
The XLaunch wizard

XLaunch is a wizard for simplifying the startup of an Xming X server. Its re-usable XML configuration files also act as mini-session managers. One X client can be selected for concurrent display from a local or remote machine. When remote, the X client is accessed securely via ⬤PuTTY (e.g. via the PuTTY Link for Xming SSH client) or ⬤SSH (e.g. using ⬤Cygwin OpenSSH) with plink.exe or ssh.exe respectively.

Remote login using ⬤XDMCP is also provided as well as a host finder and chooser via the -*find* command and XPing button...

Also use XLaunch to **just simply start the X server** and then run several X clients later by hand, or from Xmingrc menu entries.

Example .xlaunch configuration files for a remote xterm via PuTTY, a remote login via XDMCP and a remote xcalc via SSH.
Using the wizard to get a remote xcalc via PuTTY in -*multiwindow* mode...

You can select the windowing mode, the way sessions are started and save the configuration for later reuse. An XLaunch configuration file can be just clicked to rerun saved settings **without having to go through the wizard pages**. Also automatic validation of configuration files against the XLaunch XML Schema Definition is selectable when starting the wizard. Additionally, automatic display-number (i.e. X server) allocation is provided for the first twenty instances.

XLaunch Help pages...
Display settings   Session type   Start program   XDMCP settings   Additional parameters   Finish configuration (also describes configuration reuse options and the XDMCP host Finder)

International versions of XLaunch

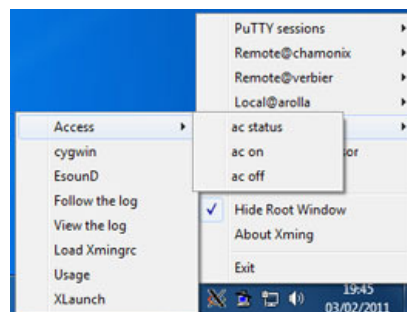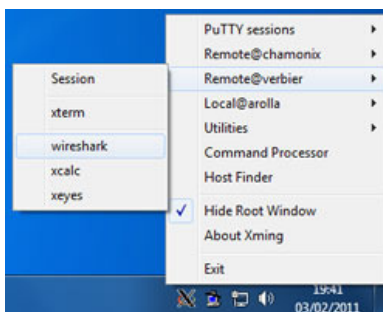| Language	Strings	Released	MD5 signature
Chinese	text	16 Sep 2007	170ded8b1a73c6de249ab649c9a90a76
Czech	text	25 Oct 2007	f0f3d8ed7df9c59c70d5dce9296966d5
Deutsches	text	16 Sep 2007	aea61e52eb6e3428f36b655993c7a346
Español	text	16 Sep 2007	6a8bfd1f7f14258d1aed79775c2ad4b4
Finnish	text	16 Sep 2007	e5a7019bb34d70b476c011c506edd7b6
Français	text	16 Sep 2007	1de51c6d718a05dcb487d0a24420aaf2
Italiano	text	16 Sep 2007	a0aa263e36495a14b90809c547cf741e
Japanese	text	27 Nov 2007	b71ec8ab186a2e7779d6c98a7d72d9cc
Korean	text	15 Nov 2007	8d01a7aa7630ff174781f8f20118abf4
Nederlandse	text	16 Sep 2007	d8348188a842044f6e3592684b7adfd2
Polish	text	07 Nov 2007	b080f196019135d23f883260d6e2504b
Russian	text	16 Sep 2007	38c6c74f51b7ceefa24aa7e66ca32b73
Slovenský	text	16 Sep 2007	e58bd86935be6738d008f1443fe2ba18

These do not include the XDMCP finder/chooser

Xmingrc and the X icon menu

You can configure the X toolbar icon menu (i.e. the right-click menu on Xming's notification area icon), Windows icons, styles and system menus (i.e. the right-click menu on a Window's title bar) using an Xmingrc file. Additionally, on the icon menu, a Host Finder is provided for listing, choosing and then accessing any responding XDMCP hosts on your network, as well as a log file viewer. I use **this Xmingrc file** to open X Window clients (singly or combined in session files), PuTTY, Cygwin or Command Processor terminals and EsounD, and to control access to the X server.

Most local Windows programs or remote Linux/Unix X clients can be run simply from Xmingrc menu items.

Xmingrc is a structured text file, so to avoid errors, study the installed default Xmingrc and example_Xmingrc files (plus my Xmingrc file: see screenshots below) and read the Xmingrc Manual.

Tools and clients

Many X.Org tools and clients have been ported to Microsoft Windows console (Windows CUI) applications and built modular using MinGW...

appres	atobm	bitmap	bmtoa	cxpm	editres	ico	listres
mkfontscale	oclock	setxkbmap	sxpm	twm	viewres	xauth	xcalc
xclipboard	xclock	xcutsel	xdpyinfo	xev	xeyes	xfontsel	xhost
xkbcomp	xkill	xlogo	xlsatoms	xlsclients	xlsfonts	xmessage	xmodmap
Xmon	xprop	xrandr	xset	xsetroot	xwininfo		

Use the links in the table above to view Xming manuals for each entry. Note: *xkbcomp* is built without a Windows console (Windows GUI), and always installed, as it is used by Xming during X server startup. Also Xmon is sourced here not from X.Org.

These additional tools are also supplied in the Xming installer...

- The simple *xroot* CUI tool provides a clickable swatch of root window for use when *-rootless* to access window manager root menus which otherwise maybe hidden.
- *follow* is a simple CUI Windows text following tool, like Linux/Unix 'tail -f', for monitoring Xming log files.
- *font-dirs* is a tool used by the Xming installer to create a custom font-dirs file. The executable itself is not installed.
- *glxgears* and *glxinfo* (+ seventeen more GLX clients from the canonical Mesa Demos) are available separately via installer component 'GLX test clients'.
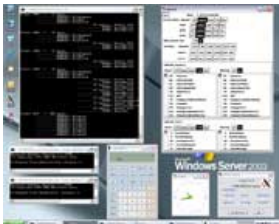
Examples, from Command Processor

```
>set DISPLAY=:0
>xsetroot –cursor_name left_ptr –fg white –bg black –solid SteelBlue
>setxkbmap de –model pc105
>xkbcomp –a :0 %TEMP%/desc.xkb                Output the keyboard source, including comments.
>xkill –frame                                 Use when –multiwindow to select a client to close.
>xroot –geometry 50x50+500+50 –color SteelBlue     Useful with –rootless and some window managers.
```

Xmon example

```
>xmonui | xmond           Xmonui graphics front-end piped to an xmond console providing trace,
                          for display 1 clients, while an X server is running display 0.
>xclock –display :1
>xcalc –display :1        Monitoring two clients started from separate Command Processor windows...
```
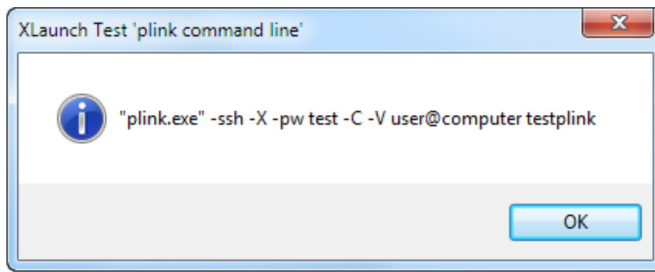

These Windows X clients are not the complete X.Org set. Since MinGW doesn't provide a POSIX API some clients just can't compile (e.g. xterm), also a few need client-side fonts or are useless on Windows. Their absence is not really significant, and most users don't need to install 'Tools and clients' anyway. Using PuTTY with Xming is however highly recommended as it provides SSH for Windows (typically used to log into remote Linux/Unix machines and execute commands) and plink is especially useful...

PuTTY Link for Xming SSH client

PuTTY Link (plink) is a connection tool, similar to Linux/Unix ssh, that is built as a Windows console (CUI) application.

The Xming plink SSH client is made with MinGW from patched PuTTY code. These modifications substitute Windows prompts for many console ones because XLaunch and Xming are built console free (GUI) and so stdout/stderr messages are hidden when plink.exe is spawned from XLaunch or Xmingrc.

Get help on using Xming PuTTY Link by clicking the plink.exe file. Also debug using plink via XLaunch with this XLaunch file i.e. a test is triggered by the tags ClientStart="PuTTY" + Program="testplink" + PW="test" that outputs...

The Run Utility

The Run Utility is an autonomous tool used to start Windows applications with a hidden attached console command window. This is the Manual for run. Its binary and source code are supplied separately from Project Xming; and licensed GPLv2.
Here is an example Desktop Shortcut using run and plink to display a remote konsole.

You could, alternatively, just use this code in a .js script file instead of the Run Utility...

```
//Konsole.js - alternative to the Run Utility example provided above.
//JavaScript to display a remote konsole without a local Command Processor...
var wshell = new ActiveXObject('WScript.Shell');
wshell.Run('"C:\\Program Files (x86)\\Xming\\plink.exe" -load colin konsole --ls',0);
```

Donations

Without updating equipment my Xming development can't continue or advance, hence this hardware funding initiative...
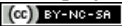
Make a Donation

Note: PayPal's site needs cookies enabled.

By donating you will get a **Donor Password** sent by email, enabling access to Xming Website Releases and Development Snapshots for **private individuals**. This will be sent to the email address in the PayPal payment history; so please make sure it works and that you are not blocking my ISP's mailservers (zen.co.uk e.g. smarthost01.mail.zen.net.uk). If you have contributed in other ways (e.g. code or patches), or not received your password: contact me. Also if you can't use PayPal, again contact me by email (colin<dot>harrison<at>virgin<dot>net) for alternatives. The suggested PayPal donation is £10 since less has a high percentage loss due to transfer charges. Note: **You don't need a PayPal account to use PayPal** from the button above, but the link does need cookies enabled.

I greatly appreciate contributions towards improving Xming's development and hosting resources. Plus, if you found Xming useful, a little thanks gives me the motivation to make it even better.

Xming Website Builds include...

- Many Enhancements, Changes and Bugfixes not in the Public Domain Release.
- The latest Website Releases and regularly updated Development Snapshots.
- Modular executables and libraries from X.Org ≥ X11R7.6 plus latest keyboard and locale databases.
- Extra Windows X clients including GLX demonstrators and Xmon.
- Support for dual-stack IP hosts (IPv4 and IPv6).
- Automatic framebuffer resizing when using the *-resize* option.
- OpenGL enabled rendering via either Mesa or Microsoft WGL (the latter provides accelerated OpenGL for graphics cards that support it).
- XCB ported to Windows without the performance degradation of a Linux API translation layer.
- The XPing XDMCP host finder/chooser integrated into XLaunch also with quick and simple activation from Xmingrc.

Other projects also benefit from Xming developments. These are freely available for their use when correctly cited in accordance with [cc] BY-NC-SA conditions.

Support

I get so much email that I literally do not have time to answer it all. I regret this, but there's nothing I can do about it. So if you can possibly avoid sending mail to me, I recommend you do so. In particular, support requests are probably better sent to newsgroups, or passed to a local expert if possible. **Reports will ALWAYS be ignored** by me if your **complete** Xming log file is not attached, if the report lacks **detail and clarity** and if you compare Xming with an X server not built from X.Org code. If a plink problem I need the plink command line used or a copy of your **config.xlaunch** file and if an Xmingrc problem I need a copy of your Xmingrc file! Failing to follow instructions, or answer

questions, will quickly lose any interest in your problem. I do however appreciate well formulated reports and suggestions; but read this website's documentation first before asking a question...I don't reply if the answer is already here. Also, please use your real name not an anonymous avatar, handle, pen or tag name.

Many issues, outside the scope of the Manuals, can be resolved by consulting the Trouble with Xming? documentation and Terms and Conditions...

Terms and Conditions

This URL links to the Project Xming Terms and Conditions including details on copyright and licenses with many clarifications. These may change or be updated from time to time. It remains your responsibility to check them whenever you access this website or download, install and use any Project Xming software.

Table of Contents