CrossOver Office™ Server Edition: Technical Briefing Document

Overview: This document is provided to value-added resellers (VARs) to assist them in understanding CrossOver Server Edition from a technical standpoint. The purpose of this is not to act as a substitute for product documentation, but to provide quick answers to commonly asked questions.

What is CrossOver Office Server Edition?

CrossOver Office Server Edition is an extension of CodeWeavers' CrossOver Office product. Server Edition allows Windows productivity applications to be run in a thin-client environment from a Linux server, much like Microsoft Terminal Server and Citrix. This is accomplished by using the X11 remote display technology that is native to the Linux OS. This provides several important advantages:

For Users:
- Allows Linux and Unix users to use popular Windows applications
- Means that users can switch to Linux without having to learn a whole new suite of applications.

For Corporate Customers:
- Allows organizations to migrate from Windows to Linux without discarding their investment in existing documents and training.
- Allows older PCs to be turned into highly effective office productivity machines. By running Server Edition, they become driven by the server's RAM and network bandwidth. This leads to cost savings.

For System Administrators:
- Allows corporate system administrators to deploy CrossOver Office in a centrally managed, easier-to-maintain configuration.
- Preserves investment in older equipment.
- Allows environments where users have multiple PCs (Unix and Windows) to consolidate on a single platform.
- Provides a simpler product licensing approach that saves time and headaches.

For the Linux Community:
- Breaks the perceived application shortage in Linux by allowing Linux PCs to run the most important office productivity applications on the planet.

How is Server Edition Different from CrossOver Office?

As the name suggests, CrossOver Office Server Edition really is an extension of CrossOver Office. The basic installation process is the same. The application suite that is supported is the same. The difference is that Server Edition allows these applications to be run remotely on a thin-client that supports X11 display. This means that Server Edition can potentially be run on a wide variety of Unix systems with relatively little effort. Server Edition also introduces administrative tools and utilities to support its deployment in a distributed environment.

What Applications are Supported?

CrossOver Office Server Edition supports the following Windows applications:

- Microsoft Office 97 and 2000, including, Microsoft Word, Excel and Powerpoint
- Microsoft Outlook
- Internet Explorer 5.5
- Microsoft Visio
- Lotus Notes 5.5
- Microsoft Viewers (Word, Excel, Powerpoint)

Note: Version 2.0 of CrossOver Office (and hence Server Edition as well) will support Office XP and MS Access applications. Version 2.0 is slated for release in Q1 2003. CodeWeavers currently supported list of applications can be found at: http://www.codeweavers.com/products/office/supported_applications.php

How does Server Edition Licensing Work?

Part of the value Server Edition provides is that the licensing approach is simpler than Microsoft's thin client solutions. As much as possible, we want to make our licensing simple, straightforward, and easy for our customers. Key points are:

- CrossOver Office Server Edition licensing is based on concurrent usage. In other words, a 100-person company who buys a 50-user license may run as many as 50 users concurrently. Those users can be any combination of individuals within the 100-person firm.
- No individual per-machine client access licenses are required, as per Microsoft terminal services.
- Server Edition does not physically restrict the number of concurrent sessions. Continuing the example above, if a 51st user accesses the CrossOver Office server, the server will still allow them to run their applications, even though they are technically beyond their limit.
- Server Edition provides tools to help system administrators determine what concurrent usage is. In other words, we provide tools to allow our customers to be honest with us.
- CrossOver Office Server Edition licensing also provides the customer the right to run CrossOver Office in standalone mode. Total of standalone and thin-client users may not exceed the total number of concurrent users specified in the license.

What is Product Pricing?

Basic product pricing is as follows:

Initial Server	$1,195.00
Additional Servers	$595.00
Client Licenses	
25	$1,185.00
50	$2,250.00
100	$4,000.00
500	17,500.00

How is the Product Supported?

VARs provide initial customer support for Server Edition. CodeWeavers supports its VARs with access to email and telephone support.

Technical Briefing

The following information is for system administrators to assist them in configuring CrossOver Server Edition.

Server Linux Distributions

Server Edition will work on any Linux distribution. The distributions that CodeWeavers tests Server Edition on are:

- SuSE 8.0, 8.1
- RedHat 7.2, 7.3, 8.0
- Mandrake 8.2, 9.0
- Xandros 1.0
- Debian

CodeWeavers strongly recommends using a supported Linux distribution for server installations.

Server Configuration

Key Points:

- Requires x86 Linux distribution
- Window manager running on server is unimportant
- Server Edition is RAM and bandwidth dependent. Unlike Citrix, Server Edition is not optimized for low bandwidth transfers. This means that remote installations (via dialup or ISDN) are generally not recommended.

Server Scalability

Server Edition scalability is still being evaluated. We have 25-user pilots running on a single server with no performance degradation. Further scalability tests are ongoing. Scalability will be strongly dependent on RAM.

Client Configuration

- The CrossOver client will run on any Linux distribution. CodeWeavers strongly recommends using one of the distributions that we test our applications on.
- Window managers supported: Gnome 1.4, 2.x, KDE 2.x and 3.x, CDE
- Supported Clients operating systems are: x86 Linux, Sparc (Solaris 8 and 9)
- Any client that can run X11 can be made to work—integration can be built to order for other platforms.
- Client machine specs are irrelevant—application speed is dependent on server and bandwidth.
- Client disk and RAM requirements are trivial—approximately 3MB of disk space and 1MB of RAM.
- Initial bandwidth tests indicate that maximum bandwidth needs are approximately 120KB/s at peak (print preview, etc.), 80KB/s for document loading, 40KB/s during normal operation, and 8KB/s when idle.

Software Installation

Server Install

Install CrossOver Office Server Edition
- Server Edition must be installed before any client software is installed.
- Server must have `ssh`. CodeWeavers strongly recommends that the most current version of `ssh` (v. 3.1 as of this writing) be used.
- Basic installation is the same as CrossOver Office product—run `install.sh.`
- Only `root` installs will work
- The server may not have another `root` install of another CrossOver Office installed on it.
- It is recommended that the server be dedicated strictly to Server Edition.

Installing Windows software on server
- Basic installation proceeds just like Crossover Office—click on the "Add" button and install the needed software.
- Customer must pay attention to software licensing issues—Server Edition does not contain license-checking features. It is the responsibility of the customer to be in compliance with their license agreements.

Prepare for Client Installation
- Every user that will run in client mode must have the identical username on the server. This is a key requirement, and will be one of the main challenges to the system integrator. Most of our clients accomplish this either through NIS or LDAP, but the expectation is that the deployed environment has already addressed this issue. For pilot installations, the user ids can be synchronized by hand.
- CrossOver Server Edition is intended to be deployed into environments where there is a well-defined policy of shared directories. That is, each client should be able to access the same files at the same mount point as the server, transparently to the user. Managing this requirement will be one of the key challenges for a system integrator.

  We have found that customers solve this problem in many different ways. Some auto-mount home directories via NFS (often in conjunction with NIS). Others simply define well-known shared mount points (via either NFS or Samba).
- `ssh` is the fundamental transport for the server application. Server Edition creates a private key/public key pair that it uses to secure this communication. The administrator will have three options:
  - The option of allowing users a key with no passphrase (recommended), or
  - Requiring a passphrase which will have to be entered the first time a CrossOver application is run, or
  - Allowing for no key, in which case the password will have to be entered every time any application is run. (Not currently implemented)
- The preferred connection method for the client is to establish a passwordless connection between server and client.   Understanding this mechanism and being able to clearly explain the benefits and risk to customers is a key challenge for system integrators.

Client Installation

Key points include:
- Client system requires `ssh`.

- Any previous installation of CrossOver Office should be removed by un-installing CrossOver. The ~/cxoffice directory should be manually removed as well.
- Software must be installed as root

"Pull" Mode of Client Installation

Server Edition provides for a "Pull" mode of installation, wherein the client software is installed and configured on each individual desktop. With pull mode:
- Installer needs root privileges on server as well
- Installer must be able to provide server ip or dns name
- Installer must have permissions to ssh into the server as root
- To install, run the install.sh shell script
- An installation wizard will appear that will walk you through the installation
- All user lever desktop, menus, associations are done automatically

"Push" Mode of Client Installation

Server Edition also incorporates a "Push" mode of software distribution for production environments. With push mode:
- Administrators can create packages (RPMs or Solaris PKGs) that include only those applications (Word, Excel, etc.) that s/he wants the client to be able to run.
- 2 packages are created (client software, profile)
- In the near future, this utility will allow packages to configured by user groups as well, rather than requiring a universal client install across the entire organization.
- CrossOver packages will be able to be distributed via Kickstart and other utilities in Linux, and Jumpstart for Solaris.

Client Configuration

- Once the client is installed on the client machine, a normal user has very little ability to change that configuration.
- Root users can make system wide changes in associations and available applications.
- Additional Windows applications cannot be installed on the client via Server Edition
- If additional Windows applications are added on the server, either a new package will need to be sent to the user, or the client can request a 'resync' with the server and pick up new applications that way.
- In the future, ServerEdition will provide the ability to tailor configurations based on user/group associations

Running Programs from Client

- User can run programs either by clicking on the application icon, or from the command line (links provided in /usr/bin), or from file type MIME associations.
- In the case of a user using a non-shared drives, a copy of the file is places on the server made read-only and then opened. Files saved from an application to a non-shared drive will be saved on the server. Obviously, this is a sub-optimal situation for editing documents, which is why having a shared drive is important.
- The ability to "install on demand" (such as MS Excel Analysis Tool Pack) works for users.
- Favorites, recent documents and other such user-specific information is retained for each user in their environment.

Uninstalling the Software

To uninstall the applications, simply use the uninstall the software via the provided `uninstall.sh` in `~/cxoffice directory`. Obviously, uninstall the server software will make the client installations immediately non-functional, whether or not the client component has been uninstalled.

Server Edition Utilities

At the present time, Server Edition ships with a relatively small set of utilities, namely a pre-flight `ssh` tool. Future releases will include log files which show:

- Current active users and the applications they are running
- Licensing Summary: Maximum/Minimum/Average CrossOver sessions for each .exe and product grouping.
- These logs will be available in Web format as well

Future utilities will also include:

- Warnings on exceeding licenses (both Microsoft and CrossOver concurrent usage).
- The ability to remove users remotely and delete their `~/cxoffice` directory
- The ability to enable and disable install applications for all clients

Security Issues

- **Passphraseless `ssh` connections.** By default, connections to the server are done without a password, meaning that the key for the server is stored on the client machine as well. This creates a potential security flaw if that user account on the client machine is breached, thereby potentially providing the intruder with access to the user's login on the server.
- **"Pull" install mode.** Doing a pull install makes a root level `ssh` connection to the server. This may be a security concern.
- **Microsoft Outlook.** MS Outlook running under CrossOver is prone to some of the same risks that have made Outlook a favorite target of virus-writers, in that Windows executables can be run under Wine on CrossOver. The Klez virus, for instance, has been reported to operate in this mode.[1] It should be noted, though, that such viruses can only affect the Windows pseudo-directories established by CrossOver under Linux, not the entirety of the local user's Linux file structure. Not only that, but if a user becomes infected with a virus on his `cxoffice` install, it is trivial for the system administrator to just remove the user's client setup by simply deleting their `~/cxoffice` directory, instead of taking the time to have to clean and rebuild an entire Windows machine. The client's `~/cxoffice` directory will be rebuilt automatically when the user next runs a CrossOver application, meaning that the user can be back up and running in a clean environment in just minutes. However, the user's preferences and any "on-demand" software will need to be restored manually.

Miscellaneous Issues

Remember to use caution when running applications as `root` on the server. Any changes made as `root` will affect **every** client and **every** user on your install.

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[1] CodeWeavers has since introduced a patch which warns CodeWeavers users if they are about to run a Windows application attachment under Wine.