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CVW

Collaborative Virtual Workspace CVW 4.0 Installation Guide

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Installation Contents

The installation software includes the following:

- Client
 - cvw-java-client-4.0.*-sparc-Solaris2.tar.Z
 - cvw-java-client-4.0.*-x86-Linux2.tar.Z
 - CVW40Installer.exe
 - cvw-palm-client-4.0.*-palmos.prc
 - docs-bin.tar.Z
- MOO Server
 - cvw-moo-server-4.0.*-sparc-Solaris2.tar.Z
 - cvw-moo-server-4.0.*-x86-Linux2.tar.Z
- Document Server
 - cvw-doc-server-4.0.*-sparc-Solaris2.tar.Z
 - cvw-doc-server-4.0.*-x86-Linux2.tar.Z
 - cvw-doc-server-mysql-4.0.*.tar.Z

Operating Requirements

The following is a list of minimal operating requirements for the CVW Server and Client software.

System requirements for the CVW Server and Document Server:

Operating System: Solaris 2.5.1, Solaris 2.6, Solaris 7, or Linux (with libc 6 a.k.a. glibc)
Hardware Platform: Sun Ultra30, Minimum: SPARC20 Model 71; Intel Pentium, Minimum: 300MHz
Memory: 128 MB
Disk space: 35 MB for CVW processes plus sufficient storage space for text, image, audio, and video files which will reside on the CVW Document Server
Swap space: 300MB Other
Other: Relational DBMS (i.e. MySQL), Java 2 (JRE 1.2.x)

System requirements for the Unix CVW Client:

Operating System: Solaris 2.5.1, Solaris 2.6, Solaris 7, or Linux (with libc 6 a.k.a. glibc)
Hardware Platform: SPARC20 Model 71; Intel Pentium
Graphics: 24-bit SX graphics (screen flashing will occur with 8-bit graphics)
Memory: 64 MB
Disk space: 15 MB (Included skeleton and support for single OS architecture; add 10 MB for each additional architecture that will be installed)
Audio Hardware: Sun microphone for audio conferencing
Video Hardware: Sun Multimedia Kit with SunVideo card and camera for Solaris;
Sun VideoPix card and camera for video for SunOS
Other: Multicast kernel patch is required for SunOS systems to use audio and video conferencing;
HTTP server is optional to provide user image icons to CVW client.

System requirements for the PC CVW Client:

Operating System: Windows 95 or Windows NT 4.0
Hardware Platform: Intel Pentium
Graphics: 1024x276 display with 24-bit graphics
Memory: 48 MB for Windows 95; 96 MB for Windows NT
Disk space: 30 MB
Audio Hardware: Soundblaster compatible audio card, microphone, speakers
Video Hardware: Connectix Color QuickCam (USB or Parallel port connection); or
Winnov Videum AV card and camera
Other: HTTP server is required to provide installation web page for CVW client and to provide user image icons to CVW client.

Network requirements for CVW audio and video conferencing:

CVW audio and video conferencing tools (Lawrence Berkeley Labs Vat and Vic) require multicast support on the network to provide multipoint conferencing capabilities with users on other subnets.

System requirements for the CVW Support Materials:

The CVW on-line support materials are in HTML (Hypertext Markup Language) format and requires an HTTP server to make it available to the users. The support materials require approximately 25 MB of disk space on the HTTP Server.

Prerequisites

Prior to installing the CVW software, verify that the following have been completed:

- Be sure that the target CVW server system has sufficient virtual memory. At least 128 MB of swap space should be available, 300 MB is recommended.

Example: swap -s

total: 100928k bytes allocated + 28312k reserved = 129240k used, 257784k available

- Be sure that you have access to an HTTP server with approximately 25 MB of disk space available. The Unix CVW client can optionally access user image icons from an HTTP server (rather than replicating all images into the client directory). The PC CVW client can optionally provide the installation software to users via a web page. The PC CVW client *requires* an HTTP server for providing user images icons to the PC CVW client. Also, the CVW on-line documentation is in HTML (Hypertext Markup Language) format and requires an HTTP server to make it available to the users.
- Group audio and video conferencing require multicast routing enabled on the participating systems if the participating systems do not reside on the same subnet. If the systems do not reside on the same subnet, the Sun-supplied multicast tunneling patch, mouted, must be installed to enable multicast traffic to span subnets. You can access the mouted software from <ftp://playground.sun.com/pub/multicast/>.

Prior to Installing CVW

Prior to installing the CVW software, verify that you have 35 MB of available disk space.

The recommended default directories for the CVW Servers are **/opt/CVWserver** and **/opt/CVWdocserver**.

If you choose not to install the CVW Server and Document Server in the recommended locations, make a symbolic link from the recommended location to the actual location after you finish installing each server.

```
cd /opt  
ln -s <path to new CVWserver location> CVWserver  
ln -s <path to new CVWdocserver location> CVWdocserver
```

The CVW software is downloaded as tar files from the CVW web site. This documentation assumes you have these files available somewhere in a directory.

Installing the CVW Server Software

Create the directory for the CVW Server.

```
cd /opt
mkdir CVWserver
```

This directory must be created on the local file system and must not be exported to other systems.

Change to the **CVWserver** directory and extract the CVW Server software using the following procedure:

```
cd /opt/CVWserver
uncompress - < cvw-moo-server-4.0.*.tar.Z | tar xvf -
```

(Substitute the correct path to the CVW server tar file appropriate for your OS.)

Modifying the CVW Startup/Shutdown Script

Edit the **cvw.boot** script in the CVW server directory so the settings below reflect your CVW Server settings. This script is used to start and stop the CVW Server (e.g., `./cvw.boot start`, `./cvw.boot stop`).

cvwuser	=	cvw	CVW Document Server user account name
serverdir	=	/opt/CVWserver	CVW Server software directory
cvwname	=	CVW	CVW database file name
portnumber	=	8888	CVW Server port
num_fd	=	unlimited	Number of file descriptors for max number of users allowed to connect to the server

It is recommended that you accept the default values. If you change the **cvwname** parameter, you must make sure your CVW database file name (normally `CVW.db`) agrees.

Copy the updated **cvw.boot** script from the CVW Server directory to **/etc/init.d/cvw** and ensure execute permissions on **cvw**. *N.B. Under some systems (such as Red Hat Linux), the directories **init.d**, **rc3.d**, and **rc0.d** may be found under **/etc/rc.d**.*

```
cp /opt/CVWserver/cvw.boot /etc/init.d/cvw
```

For automatic startup and shutdown of the CVW server process when your system starts up or shuts down, create symbolic links to the **cvw** boot script in `/etc/rc3.d/` and `/etc/rc0.d/`.

```
ln /etc/init.d/cvw /etc/rc3.d/S99cvw
ln /etc/init.d/cvw /etc/rc0.d/K66cvw
```

Creating the CVW Unix User Account and Setting File Ownership

Create a Unix user account to use to run the CVW server and Document server processes.

```
user name: cvw
user ID: 101 (unless already in use)
group ID: 2
```

You can use the following in your `/etc/passwd` file.

Installing the CVW Document Server

It is recommended that the CVW Document Server be installed on the same host system as the CVW Server. If you opt to install the Document Server on an alternate host system, install it into the recommended location of **/opt/CVWdocserver**. The following instructions assume this directory will be used; modify the instructions accordingly if you use a different directory.

Note: Because the new document server runs as a Java applet, Java 2 (Sun JDK 1.2.2 or later) **must** be installed on the document server machine.

To install the CVW Document Server, two items need to be downloaded: the document server package (cvw-doc-server-4.0.*.tar.Z) and a corresponding mysql database piece (cvw-doc-server-mysql-4.0.*.tar.Z). These files should be stored in a temporary location, such as /tmp.

To create the document server directory:

```
cd /opt  
mkdir CVWdocserver
```

Change to the **CVWdocserver** directory and extract the CVW Document Server software using the following procedure:

```
cd /opt/CVWdocserver  
uncompress - < /tmp/cvw-doc-server-4.0.*.tar.Z | tar xvf -
```

Install the MySQL database server software by extracting the files within the MySQL download piece:

```
uncompress - < /tmp/cvw-doc-server-mysql-4.0.*.tar.Z | tar xvf -
```

Modifying the Document Server Configuration Files

The CVW document server now uses several standard components to provide document functionality. These include an Apache web server, a MySQL database, and Java Servlets in the standard distribution. To ease the document server setup, a configuration script has been provided. Modify the file **/opt/CVWdocserver/admin/install.sh** to conform to your installation by modifying the following variables:

```
INSTALL_DIR=/opt/CVWdocserver           # where new docserver is installed  
DOCROOT=$INSTALL_DIR/apache/htdocs     # new doc-store directory  
DSPORT=8889                             # document server port  
JAVAHOME=/usr/java                     # Java installation directory  
CVWDSUSER=cvw                           # CVW user  
CVWDSGROUP=bin                          # CVW group
```

Then execute the script by executing the script as root:

```
su root  
sh install.sh
```

Modifying the Document Server Startup/Shutdown Script

Change to the CVW Server directory (usually /opt/CVWserver) and edit the **cvwds.boot** script so the settings below reflect your Document Server settings. This script is used to start and stop the CVW Document Server (e.g., ./cvwds.boot start, ./cvwds.boot stop).

```
cvwdsuser = cvw           CVW Document Server user account name
serverdir = /opt/CVWdocserver CVW Server software directory
dbdir     = $serverdir/mysql Database directory
dbscript  = support-files/mysql.server Launch script for database
wbscript  = $serverdir/apache/bin/apachectl Launch script for web server
```

Copy the updated **cvwds.boot** script from the CVW Server directory to **/etc/init.d/cvwds** and ensure execute permissions on **cvwds**. *N.B. Under some systems (such as Red Hat Linux), the directories **init.d**, **rc3.d**, and **rc0.d** may be found under **/etc/rc.d**.*

```
chmod 750 /opt/CVWserver/cvwds.boot
cp /opt/CVWserver/cvwds.boot /etc/init.d/cvwds
```

For automatic startup and shutdown of the CVW server process when your system starts up or shuts down, create links to the **cvwds** boot script in **/etc/rc3.d/** and **/etc/rc0.d/**.

```
ln /etc/init.d/cvwds /etc/rc3.d/S99cvwds
ln /etc/init.d/cvwds /etc/rc0.d/K66cvwds
```

Starting and Testing the Operation of the CVW Document Server

To start the CVW Document Server, run the following command as root:

```
/etc/init.d/cvwds start
```

The operational status of the CVW Document Server can be tested from any workstation on the network that is running a Web browser. Enter the following URL:

```
http://<doc-server-hostname>:<doc-server-port-number>  
Example: http://server.mitre.org:8889
```

If the Document Server is operational, the Apache web server test page will appear with the main title "*It Worked! The Apache Web Server is Installed on this Web Site!*".

To check the operation of the servlet, a test servlet is included with the distribution. Using the web browser again, enter the following URL:

```
http://<doc-server-hostname>:<doc-server-port-number>/example/Hello  
Example: http://server.mitre.org:8889/example/Hello
```

An operational servlet will return:

```
Example Apache JServ Servlet  
Congratulations, Apache JServ is working!
```

For debugging purposes, the following log files should provide helpful information:

/opt/CVWdocserver/apache/logs/error_log
/opt/CVWdocserver/docservlet/docserv.log
/opt/CVWdocserver/docservlet/jserv.log

Installing the Unix CVW Java Client

Prior to Installing the Unix CVW Java Client

The CVW client software should be installed in a shared file space (such as NFS) so that only one version of the software need be installed and maintained. If you do not have a shared file space available from a server, you must perform the following installation procedures on each user workstation.

Currently, two Unix platforms are supported: Solaris and Linux. Each of these systems have a unique package installation program. Solaris uses the pkgadd command to add software to a system, while Linux uses rpm. The instructions will cover these two cases separately.

Installing the Solaris CVW Java Client

Log in as root. Download the package release *cvw-java-solaris-client-4.0.tar.Z* and save it into a temporary directory. Still from the temporary directory, the following command will extract the contents of the download:

```
uncompress - < cvw-java-solaris-client-4.0.tar.Z | tar xvf -
```

Using the Solaris pkgadd command from that same directory will install the client on the host machine:

```
pkgadd -d `pwd` CVWclient
```

By default, the client will be installed in */opt/CVW* directory. This path can be changed using the *-R* flag with the pkgadd command. For other options, see the pkgadd man pages.

Once started, pkgadd will prompt for some information to configure the client. Simply pressing return at each question will accept the default value presented in the square brackets. This information includes:

```
CVW Server hostname
CVW Document Server hostname
CVW Database name
CVW Server port
CVW Document Server port
CVW User Images repository
```

After collecting this information, the installation program will redisplay this information to insure the values are correct. A 'n' response will allow the user to reinput the data. After responding 'y', the program will continue installing the client program. A sample installation is listed below. See [Post Installation Procedures](#) for final configuration details.

```
-----
stars# pkgadd -d `pwd` CVWclient

Processing package instance <CVWclient> from </var/spool/pkg>

CVW client program
(sparc) 3.3
The MITRE Corporation
You will now be asked for some information to be used when starting up the CVW client
Simply pressing Return will select the default values
The values selected will be displayed when finished

What is the CVW Server hostname? [cvw-server]:  [?] kagoona.mitre.org
```

```

What is the CVW Document Server hostname? (if different than server name)
[kagoona.mitre.org]: [?] kagoona.mitre.org

What is the CVW database name? [CVW]: [?] CIIS

What is the CVW server port? [8888]: [?]

What is the Document server port? [8889]: [?] 8880

Where can the user images be found?
This url string should end with a "/"
[http://kagoona.mitre.org/cvw/user-images/]: [?]
These values will be placed in the resource file:
CVW Server Name           = kagoona.mitre.org
CVW Document Server Name  = kagoona.mitre.org
CVW Database Name        = CIIS
Server Port Number       = 8888
Document Server Port Number = 8880
User Image location      = http://kagoona.mitre.org/cvw/user-images/

Are these values correct? [y]: [y,n,?] y

The selected base directory </opt/CVW> must exist before installation
is attempted.

Do you want this directory created now [y,n,?,q] y
Using </opt/CVW> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <CVWclient> [y,n,?] y

Installing CVW client program as <CVWclient>

## Installing part 1 of 1.
/opt/CVW/images/96top_tp.gif
/opt/CVW/images/Arr_16_left.xbm
/opt/CVW/images/Audio.gif
...
/opt/CVW/sounds/5.au
/opt/CVW/sounds/ring.au
/opt/CVW/startcvw.tmpl
[ verifying class <none> ]
## Executing postinstall script.
The shell script /opt/CVW/runtime/bin/ns.sh has been provided to launch the Netscape
browser.
Please make sure the script points to your version of Netscape. Additionally, modify the
text/html line within /opt/CVW/mime-db as necessary to point to this script

Installation of <CVWclient> was successful.

```

Installing the Linux CVW Java client

Log in as root. Download the Java client rpm and save the file into a temporary directory. Use the following command to install the client:

```
rpm -i cvw-java-linux-client-4.0-1.i386.rpm
```

By default, the client will be installed into /usr/local/cvw, but this can be modified by using ??? on the command line. See the rpm man page for more details on the rpm package manager.

After installation, several files need to be modified. The **server.cvw** must be modified to point to your correct CVW installation parameters. Also, the startcvw script needs several variables modified to support your local system. See the [Post Installation Procedures](#) for further details.

Post Installation Procedures

A couple of final configuration steps will complete the Unix installation.

Mime-db file

First, ensure that the file **mime-db** points to the external applications that support particular mime-types. Some of the more common mime-types have been added to this file, but it isn't a comprehensive list. Any further mime-types you wish to support must be entered into this file.

Launching of Web References (URLs)

Additionally, note that for HTML support, mime-db points to a script store in <install directory>/runtime/bin/ns.sh. This script was added so that the Unix Java client could correctly open URL's. Make sure this script points to the browser installed on your machine.

Setting File Ownership

Set the ownership of all files in the **CVW** directory.

```
cd /opt/CVW                for Solaris
cd /usr/local/CVW         for other

chown -R root .
chmod -R go-w .
chgrp -R bin .
```

CVW User "home" directory

With this Unix Java CVW client, a .cvw directory gets created in the users \$HOME directory. In this directory is a "Users" directory and then a directory gets created for each CVW user the user logs in as. In this directory, the .cvwprefs file will be found as well a cache directory for any local storage for the document server.

Administration Steps to Get Started

Configuring CVW Server Connection Settings

The **Server.cvw** file contains connection information for a CVW Server and is used to launch the CVW client application. The prefix of the "Server.cvw" file name can be any name descriptive of the CVW Server (e.g., Training.cvw). The file extension must be .cvw (following Microsoft Windows conventions) so that the Windows operating system can complete the association and launch the CVW application against the server configuration file.

Before providing the CVW application to your users, you must customize this file for your CVW Server. Edit this file to reflect the following.

cvw.server.host	Host name of the CVW server host
cvw.server.port	Port number of the CVW server
cvw.server.name	Name of the CVW Virtual Building
cvw.docserver.host	Host name of the CVW Document server host
cvw.docserver.port	Port number of the CVW Document server
cvw.docserver.url	Path to the document servlet
cvw.version	Version of this CVW client
cvw.debug	Enable client debug mode (true/false)
cvw.userimages.url	Web location (URL) for user image icons
http.proxyHost	Proxy server host name for user image access
http.proxyPort	Proxy server port number for user image access
cvw.mwb.proxyHost	Proxy server for whiteboard URL backdrops
cvw.mwb.proxyPort	Proxy server port number for whiteboard URL backdrops

The **cvw.debug** value should be set to *false* unless your administrator has recommended it's use for specific debugging purposes. If this value is left true, it can affect client performance (in terms of the speed of the client).

The **cvw.version** value should not be changed from the value provided in the default configuration file, unless your administrator has recommended the change.

Specifying the Location of User Image Icons in the server.cvw File

CVW user images can be stored in a directory on a web server.

Edit the **server.cvw** file to include location where the CVW user images will be stored by editing the **cvw.userimages.url** value. If you want to store the images in a local directory on your workstation, the URL must be in the format of [file:///C://<path>/user-images](file:///C:/<path>/user-images) for Windows systems or <file:/path/user-images> for Unix systems.

Specifying a Proxy Server for Whiteboard Access

If users will be accessing whiteboard backdrops from a web server outside your firewall, set the **cvw.mwb.proxyHost** and **cvw.mwb.proxyPort** values.

Specifying Proxy Server Use When Retrieving User Images from a Web Server

If you will be accessing your user images from a web server located outside your firewall, then set the **http.proxyHost** and **http.proxyPort**.

Below is a sample **Server.cvw** file.

```
-----  
#  
# Property file for CVW  
#  
cvw.server.host=ReplaceMe.server.gov  
cvw.server.port=8888  
cvw.server.name=CVW  
cvw.docserver.host=ReplaceMe.server.gov  
cvw.docserver.port=8889  
cvw.docserver.url=/servlet/docervlet  
cvw.version=4.0  
cvw.debug=false  
#####  
# User Images  
#####  
#this url must end with a /  
cvw.userimages.url=http://cvw.mitre.org/cvw/user-images/  
  
#####  
# User Images use HTTP Proxy Server  
#####  
# If you need a HTTP proxy server to access User Images  
# outside of your firewall, set these to your proxy server  
# host and port number. Otherwise, comment it out with a #  
# if you do not want to use a proxy server for user images.  
# This is useful if all your user images are within your firewall  
# and your proxy server operates under a heavy load.  
# Ex  
#http.proxyHost=proxy.somewhere.org  
#http.proxyPort=80  
  
#####  
# Whiteboard backgrounds use HTTP Proxy  
#####  
# If you need a HTTP proxy server to access whiteboard background  
# images outside of your firewall, set these to your proxy server  
# host and port number. Otherwise, comment it out with a #  
# if you do not want to use a proxy server for whiteboard images.  
# This is useful if all your whiteboard images are within your firewall  
# and your proxy server operates under a heavy load.  
# Ex  
#cvw.mwb.proxyHost=proxy.server.gov  
#cvw.mwb.proxyPort=80  
cvw.mwb.proxyHostt= proxy.server.gov  
cvw.mwb.proxyPort=80  
-----
```

Configuring Default User Settings

The administrator may configure custom default user settings for first time CVW users by editing the **master.cvwprefs** file located in the CVW client installation directory. (Note, for Window 95/NT users, the user must download this file as part of the install procedure, as described in the section below “Installing the Java Windows Client”). This file is used to create the .cvwprefs file in the user’s home directory when they first connect to CVW. If a user has previously used CVW, custom preferences will not be overwritten by the new cvwprefs file.

It is strongly recommended that you make a backup of these files if you choose to change them.

The **master.cvwprefs** file contains audio and video conferencing settings, display preferences, and window geometry settings.

The contents of the **.cvwprefs** file follows. As an administrator, you can provide defaults for as many of these preferences as desired. If no default is desired, you should delete the line completely.

.cvwprefs File

```
#CVW Preferences, DO NOT EDIT  
#Wed Apr 19 14:14:36 EDT 2000  
cvw.map.show=false
```

```
cvw.main.geometry=0.0.512.738
cvw.toolbar.show=true
cvw.proxy.defaultCmd=1
cvw.statusbar.show=true
cvw.audio.rtp=true
cvw.online.show=false
cvw.audio.encoding=GSM
cvw.audio.micVol=16
cvw.emacs=false
cvw.audio.TTL.multicast=16
cvw.video.bandwidth=32
cvw.video.encoding=H.261
cvw.proxy.geometry=250.200.540.450
cvw.carry.show=false
cvw.contents.show=true
cvw.users.show=true
cvw.carry.geometry=250.200.500.262
cvw.audio.geometry=300.300.300.320
cvw.map.geometry=-100.-100.250.300
cvw.audio.speakerVol=100
cvw.online.geometry=-50.-50.500.290
cvw.video.geometry=200.200.300.280
cvw.video.show=false
cvw.video.TTL.multicast=16
cvw.defaultCmd=1
cvw.timezone.local=true
cvw.video.framerate=8
cvw.audio.show=false
cvw.audio.TTL.unicast=16
cvw.moo.text=true
```

Updating the mime-db File to Enable Users to Import Files into CVW

The Unix CVW client uses the **mime-db** file to generate the list of file types that users can import into CVW. Any mime file, such as text, image, audio, video, etc., can be imported into CVW. CVW also uses the mime-db file to determine which application to use when opening a CVW document.

Edit the **mime-db** file located in the **\$CVWHOME/lib/mime-db** to reflect any local customization required.

The format for the MIME type entries is as follows:

<MIME type>;<CVW name>;<Edit application>;<View application>

Example: text/plain; ASCII Text Document; textedit; textedit

It is recommended that the file be tailored to mime entries for the applications that will be utilized by the user environment. Entries in the sample file provided that are not applicable should be deleted. The file entries should be re-ordered so that frequently used applications appear at the top of the file (and therefore at the top of the user's selection menu in the CVW client).

The default mime-db file is provided below:

mime-db File

```
#
# THE FORMAT OF THIS FILE:
#
# <MIME type>;<CVW name>;<Edit application>;<View application>
#
text/plain;ASCII Text Document;textedit;textedit
application/postscript;PostScript File;pageview;pageview
image/gif;GIF Image;xv;xv
image/jpeg;JPEG Image;xv;xv
audio/au;AU Audio File;/dev/null;/dev/null
audio/wav;WAV Audio File;/dev/null;/dev/null
audio/x-mpeg;MPEG Audio File;/dev/null;/dev/null
video/mpeg;MPEG video;/dev/null;/dev/null
application/applix;ApplixWords Document;applixwords;applixwords
application/frame;FrameMaker Document;fm;fm
application/msexcel;Microsoft Excel Worksheet;/dev/null;/dev/null
application/msword;Microsoft Word Document;/dev/null;/dev/null
application/ms-powerpoint;Microsoft Powerpoint Document;/dev/null;/dev/null
application/pdf;Adobe PDF;/dev/null;/dev/null
application/rtf;Rich Text;richtext;richtext
application/vnd.applix-presents;Applix Presents Document;/dev/null;/dev/null
application/vnd.applix-spreadsheet;Applix Spreadsheet Document;/dev/null;/dev/null
application/vnd.lotus-1-2-3;Lotus Spreadsheet Document;/dev/null;/dev/null
application/vnd.lotus-freelance;Lotus Freelance Document;/dev/null;/dev/null
application/vnd.lotus-word-pro;Lotus Word Pro Document;/dev/null;/dev/null
application/wordperfect;Word Perfect;/dev/null;/dev/null
application/x-docserv;DocServer Document;/dev/null;/dev/null
application/x-fish-state;FISH State Document;/dev/null;/dev/null
application/x-mate-state;MATE State Document;/dev/null;/dev/null
application/x-mate-session;MATE Session Document;/dev/null;/dev/null
application/x-msiia;MSIIA Document;/dev/null;/dev/null
application/x-zip-compressed;ZIP Compressed Archive;/dev/null;/dev/null
audio/*;Generic Audio File;audiotool;/dev/null
image/pbm;PBM Image;/dev/null;/dev/null
image/nitf;NITF Image;/dev/null;/dev/null
image/sun-raster;Sun Raster Image;xv;xv
image/tiff;TIFF Image;xv;xv
image/x-png;PNG Image;/dev/null;/dev/null
image/x-MS-bmp;Microsoft Bitmap Image;xv;xv
image/x-xwd;X11 Window Dump;xv;xv
image/*;Generic Image;xv;xv
text/html;HTML document;textedit;netscape
```

```
text/richtext;Rich Text;richtext;richtext
video/anim;ANIM File;/dev/null;/dev/null
video/avi;AVI Movie;/dev/null;/dev/null
video/dl;DL Movie;/dev/null;/dev/null
video/fli;FLI Image;/dev/null;/dev/null
video/quicktime;QuickTime movie;/dev/null;/dev/null
video/sgi;SGI Movie;/dev/null;/dev/null
video/*;Generic Video File;/dev/null;/dev/null
video/sgi;SGI Movie;/dev/null;/dev/null
video/*;Generic Video File;/dev/null;/dev/null
```

Updating the doctypes table to Enable Windows-Unix File Use

The Unix CVW client uses MIME types (specified in the mime-db file) to determine which application to use when opening a file in CVW. The Windows platform uses file extensions (e.g., .txt, .doc, .ppt, .gif, .jpg) to determine which application to use to open a file. In addition, the Windows CVW client uses the file type/application value from the doctypes table to identify the file type to the user.

In order to enable the Unix and Windows CVW users to open files generated by each other, the **doctypes** table within the document server database must be edited to reflect the MIME type to Windows file extension mapping.

In order to modify the table, the mysql user interface can be used. The user can log into the database using the following command:

```
/opt/CVWdocserver/bin/mysql -u <username> -p docserv
```

The user will be prompted for a password to log into the database. By default, the document server database ships with the account username: **dsuser** with a password: **dsuser2**. It is recommended that you change this password after installation as described in the “Changing the Default Login of the Document Server” in the CVW 4.0 Administration Guide. The interface tool will then allow the user to enter values directly into the database using standard SQL statements. For example, to see which mime-extension pairs currently reside in the database for the ‘txt’ extension, use:

```
mysql> SELECT * FROM doctypes WHERE extension='txt';
```

To add an entry into the database, the INSERT command can be used. For example, to add an entry for MPEG3 audio files, the following command could be used:

```
mysql> INSERT INTO doctypes VALUES ('audio/mpeg', 'MPEG3 Audio File', 'mp3');
```

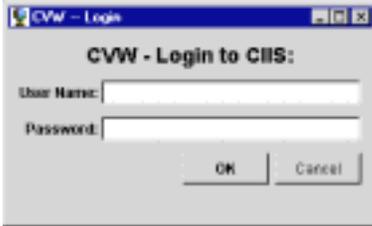
Additional information on SQL can be found with the documentation included with the document server database.

Testing the Operation of the CVW Client

To test the CVW Client, log in to the Unix system as one of the users and type the following:

```
cd /opt/CVW
./startcvw server.cvw
```

Enter the CVW user name for Admin (Admin) and password (initially, there is no password) and press OK



The CVW client will appear.



To disconnect from the CVW Server, select **Quit** from the **File** menu.

Configuring CVW Server Settings

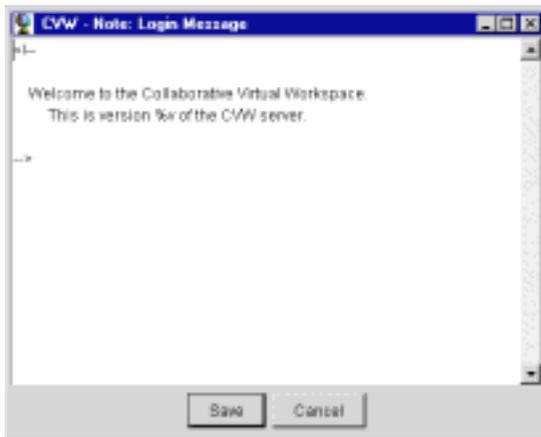
Modifying the Login Message, New User and Modify User Mail Messages

There are three files that should be changed before user account creation takes place:

- the “Login Message” which is displayed to users when they log into the CVW
- the “New User Mail” message which is sent to new users with their user name and password if email notification was enabled, and
- the “Modify User Mail” which is sent to users when their user account information has been modified.

Log into the CVW Client as Admin and open the Admin’s private data folder by clicking on the “Carry” tool bar icon or by selecting the “Carrying Folder” option from the View menu. A dialog box will appear, displaying the Login Message, New User Mail, and Modify User Mail files.

To edit the Login Message, double-click on the item in the Carrying Folder. A window with the login message will appear. Edit the text accordingly. The “%v” on the second line automatically fills in the version number of the CVW upon display of this message. You should keep this line, so that if users report a problem, they can easily check what server version they are connected to. You can also include a “%u” anywhere in the login message, which will be replaced in the display with the uptime of the CVW server. When you have finished editing the message, click on the “OK”.

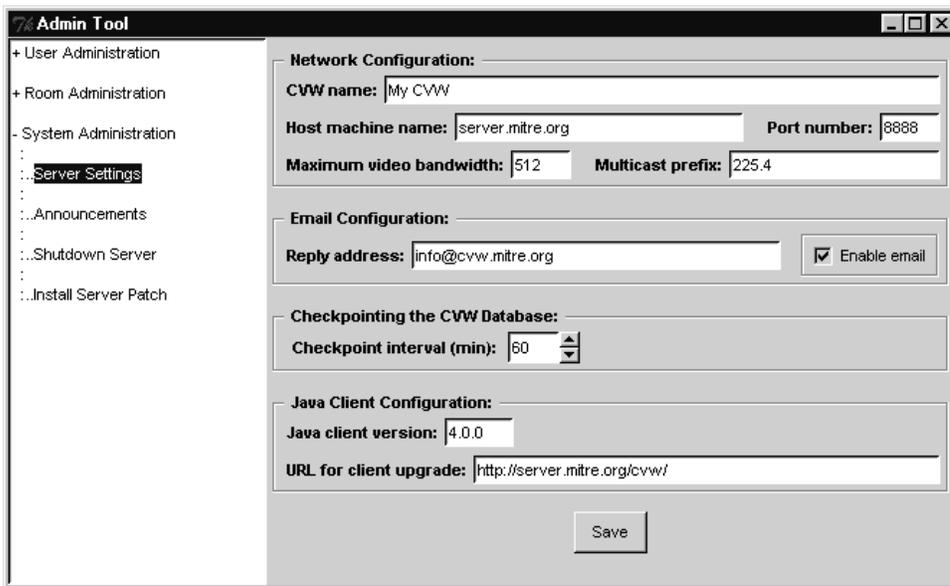


If email notification is enabled, you will need to edit the New User Mail message. Double-click on it in the Carrying Folder. A window with the message will appear. Edit the message so that it is customized to your organization. Provide information such as administrator point of contact, web address of help materials, etc. When you have finished modifying the message, click on the “OK” button.



Repeat the same procedure for the Modify User Mail message.

Modifying the CVW System Settings



The system settings for your CVW Server should be set at the time of installation of the CVW Server software. To modify the CVW system settings, log into the CVW client as user Admin. Select “System Settings” from the Admin menu and click on the “Network” tab.

To identify the server information, enter the name of your CVW Server into the “CVW name” field, the host name of your CVW Server into the “Host machine name” field, and the port number for the CVW Server in the “Port number” field.

If your Unix server is configured to send email and you wish to allow the CVW to send notification messages to users via email (e.g., to notify a user of a new account creation, to automatically mail bug reports to CVW Central Support, etc.), select the “Enable email” option.

If the audio and video conferencing tools will be used by users residing on different subnets, the multicast group assignment must be identified to the CVW Server. If multicast routing is required in your environment, enter your multicast prefix into the "Multicast prefix" field.

Note: Prior to entering the multicast prefix, verify that the multicast prefix is not already in use on your network. Duplicate multicast prefixes cause audio/video conferences to cross if the same multicast prefix is used.

If video conferencing will be used by your CVW users, you may set the maximum bandwidth allocation per user by entering the value in kbps in the "Maximum video bandwidth" field.

Additional Multicast Administration Steps

Shared Memory Requirements for Video Conferencing Tool (LBL VIC)

The video conferencing tool used by CVW, Lawrence Berkeley Labs VIC requires that the shared memory segment size be increased to support displaying full size 24-bit video conferencing windows.

To make these changes under Solaris, edit **/etc/system** and add the following.

```
set shmsys:shminfo_shmmax=2097152
set shmsys:shminfo_shmseg=24
```

If you are running SunOS, rebuild the SunOS kernel to increase the memory size. Edit the kernel configuration file located in **/sys/sun4m/conf** with the line below and configure and install the new kernel. Note: If you have not previously rebuilt a SunOS kernel, it is recommended that you work with a system administrator who has this experience.

```
options SHMSIZE=2048
```

Correcting Solaris 2.6 Graphics Library Incompatibility on SBUS Platforms

If the CVW client is running on a Solaris 2.6 SBUS platform, the audio and video tools will fail due to inability to access a graphics library in the expected location. To avoid the error, make a symbolic link from the expected location to the actual location of the graphics library.

```
cd /opt/SUNWits/Graphics-sw/xil/lib
mkdir pipelines
cd pipelines
ln -s /usr/openwin/lib/xil/devhandlers/xilIO_SUNWrtvc_ucode.a xilSUNWrtvc_ucode.a
```

Note, you should only perform this change on the Solaris 2.6 SBUS platforms; it is not required for PCI bus based systems.

Configuring Video Multicast Group for Compatibility with Legacy SD

This step is optional. If you are not interfacing CVW room-based audio/video conferencing with Lawrence Berkeley Labs SD, skip to the next section, entitled "Updating the transtable.db file to Enable Windows-Unix File Use".

In some cases, there may be a requirement to interface CVW room based audio and video conferencing with external (non-CVW) users using Lawrence Berkeley Labs Vic (video conferencing), Vat (audio conferencing), and SD (Session Directory). SD provides the ability to create, advertise, and join

multicast conferences. For compatibility with SD, a server side configuration setting enables the CVW conferencing tools to use the same multicast group address for audio and video media. (Note: this results in nonconformance with current MBONE conventions and loss of compatibility with the more current SDR.)

The default configuration for CVW conforms to current MBONE conventions and uses different multicast group addresses for audio and video media. This method is compatible with the newer Lawrence Berkeley Labs SDR tool (predecessor to SD).

This SD compatibility option is supported for CVW Server 3.0.4 and above, CVW Unix client Version 3.0.4 and above, and CVW Windows client 3.0.6 and above. Older clients will ignore the setting and continue to send audio and video on separate group addresses.

To enable SD compatibility, log into the CVW client as Admin, and enter the following command into the command entry area:

@sd-compatibility on

To disable SD compatibility, and restore standard multicast group address use, log into the CVW client as Admin, and enter the following command into the command entry area:

@sd-compatibility off

Installing Windows CVW Java Client

This section provides information on how to install the Windows CVW Java client. To allow for users to access the installer from a web server, please see the section "Installing CVW Web Documentation".

Installing the CVW Client Software on a Windows PC

The CVW Installer will install the CVW client application and related tools (e.g., shared whiteboard application, audio conferencing tool, video conferencing tool) in the default install location of C:\Program Files\Mitre\CVW and create a program group for CVW. The installation location can be changed during installation. On Windows 95 platforms, a "User" directory (for user preferences and document cache) is created in the CVW application directory. On NT 4.0 platforms, a "CVWUser" directory is created in the NT user's home directory. The installer will establish file associations between files with .cvw extensions (CVW startup files) and the CVW.exe, and between files with .mwb (shared whiteboard) extensions and the whiteboard runtime application.

Upgrading the CVW Windows Client

Save changes to any documents you were editing in CVW. Otherwise, changes made to those documents will be lost.

Uninstall the previous version of CVW.

Quit the CVW application and all other running applications, including any background processes such as a virus scanner.

Open the "Add/Remove Programs" from the Control Panel (Select Settings->Control Panel from the Windows Start menu).

Find and select the "MITRE CVW" entry in the list and click the "Add/Remove..." button. Answer "Yes" to the confirmation dialog.

The uninstaller will display the status and may report that some files were not deleted. Click the "OK" button when the uninstall process has completed.

Follow the procedures below to install the new version of the CVW client.

Downloading the CVW Client Installer from the Web Server

Use your web browser to navigate to the CVW Installation web page and download the following:

1. the **CVW40Installer.exe** for the PC application version of the client
2. the **Server.cvw** (default server configuration file).
3. **master.cvwprefs** (optional)

<http://<yourserver>/cvw/win-cvw/install.html>

Example: <http://server.mitre.org/cvw/win-cvw/install.html>

Installing the CVW Client

Start the installation by double clicking on the CVW4.0Installer. A starter screen will appear; click the "Finish" button to extract the installer.

The installer will display a "Welcome" screen; click on the "Next" button. You will be prompted with two software license agreements. Read each and click on the "Yes" button to accept the terms of each agreement and proceed with the installation.

The installer will prompt you to install the CVW software into C:\Program Files\MITRE\CVW. Click on the "Next" button to accept the default location, or click on the "Browse" button to select another location then click "Next".

The installer will notify you of the Program folder in which the program icons will be installed. You may accept the default location or specify another location, and click the "Next" button to proceed.

The installer will search your system for CVW server configuration files and display them in a dialog box. Check the configuration files you would like to have associated with the new CVW installation; these will automatically be added to the CVW Program group and copied to the CVW application directory. The installer will not remove any files from your system.

The installer will look for a master.cvwprefs file on your desktop. If it exists, it will ask you if you want to copy it to the CVW installation directory.

The installer will install the CVW software, and will prompt you with the "Setup Complete" screen when complete. Click on the "Finish" button.

Adding CVW to the Windows Startup Folder

To set up CVW to automatically start up when you turn on your computer, create a Shortcut to the Server.cvw startup file (typically located in C:\Program Files\Mitre\CVW) and place it in your "StartUp" folder in the "Programs" folder of your Start menu.

Select "Taskbar..." from the "Settings" menu of the Start menu.

Click on the "Start Menu Programs" tab, and click "Add" button.

Click the "Browse" button and find the "Server.cvw" file you want to use.

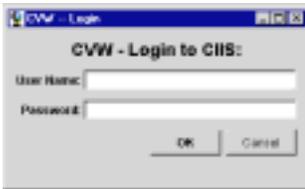
Click the "Next" button.

Select the "StartUp" folder. Click the "Next" button.

Accept or Change the name for the shortcut. Click the "Finish" button.

Testing the Operation of the CVW Client

You are now ready to run the CVW client. Select the CVW 4.0 application from your start menu or double click on the Default.cvw icon. You will be prompted to log in to CVW.



Enter your CVW user name and password and click on the "OK" button. The CVW Client will appear.



Select the "Exit" option from the File menu to disconnect.

Installing the Palm Client

Prior to Installing the Palm Client

The Palm CVW client requires Palm OS 2.0.5 or newer, and at least 60K of memory on your Palm to install. For best results, you should have more than this minimum in order to run the client.

The Palm CVW client also requires that you have TCP/IP connectivity through a modem or other device with a service provider or other network. This implies Palm CVW can only be used with the PalmPilot Pro or newer Palm device that supports TCP/IP. However, please note that Palm CVW cannot be used with the built-in wireless connectivity provided by the Palm VII. Nonetheless, other wireless solutions are possible from third parties with some Palm devices.

Please make sure your Network preferences are correctly configured and working before trying to use Palm CVW.

Installing the Palm Client

Use the Install Tool that came with your Palm Desktop software to select the Palm CVW .prc file for installation. Then, HotSync your Palm to transfer the application.

Adding CVW Servers to the Palm Client

After launching the Palm CVW client, tap “New...” to create a new CVW server entry. Enter a name for the server, and its host and port number. Note that document server information is not entered; the Palm CVW client does not make any contact with document servers.

You may also optionally enter a username and/or a password if you would like to use these to login automatically to the server. Otherwise you will be prompted for the missing information each time you connect.

Tap “OK” to save the new server entry; it will appear in the list of servers.

Testing the Operation of the Palm Client

Tap on the server name you wish to connect to, then tap the “Connect” button. An attempt will be made to establish a network connection to the server. If successful, you will be logged in if you provided your username and password information previously. If not (or otherwise if your login fails), you will be prompted to enter this information.

You can disconnect from the server either with the “Options/Disconnect...” menu item or simply by switching to a different Palm application.

Installing CVW Web Documentation

This section provides information on how to install the CVW web documentation for both the Unix and Windows CVW clients. The CVW Windows client can be accessed from a web server for installation, and is included with the web documentation.

Installing the CVW Web Documentation For Unix and Windows

The CVW documentation consists of a CVW home page, with links to background information, technical information, and user documentation. The documentation includes the following:

- CVW Functional Overview
- A CVW Case Study
- Release Notes for this version
- CVW System Requirements
- CVW Technical Documentation, including Installation Guide, Upgrade Guide, Administration Guide, and Multicast Installation Notes (in PDF format)
- CVW Quick Reference Guides for Unix, Windows and Palm clients

Installing the Web Documents on Your HTTP Server

Note: Since the CVW Document Server is now using a standard web server, this can be used to display the CVW documentation.

The CVW web documentation should be installed by your HTTP Server administrator. Change to the directory on your HTTP server in which HTML files are stored and install the CVW web materials into this directory. They will automatically be placed into a directory called “cvw”.

```
tar xvf /cdrom/client/docs-bin.tar
```

To verify that the CVW support materials were installed properly, start your Web browser and view the URL **http://<HTTP server name>/cvw/**

Example: http://server.mitre.org/cvw/

The following are provided with the web documentation.

index.html	index.html to be edited for your configuration
images/	Gif images used by index.html
info/	System requirements, technical documents, CVW overview
java-cvw	Quick Reference Guide for Java Windows and Unix clients
unix-cvw/	Unix client installation instructions
win-cvw/	Windows client Installer and installation instructions
palm-cvw/	Palm client installation instructions and Quick Reference Guide
user-images/	Optional location for user image icons referenced by CVW clients
local/	Optional location for site specific information about CVW

Providing an index.html File

The **index.html** file provided in the **cvw/** directory has references to all available client platforms (Unix Windows, and Palm platforms). You will have to modify it to provide access to the client platforms that you intend to support in your CVW environment.

Adding Site Specific Information About Your CVW Environment

The **cvw/local/** directory is provided as an optional directory for providing site specific information about your CVW environment. Customize one of the **index.html** files found in **cvw/index-files/** to provide links to your site-specific information. Keeping your site-specific information clearly separated in this way will make future CVW documentation upgrades an easier process.

Providing the Windows CVW Client Installer via a Web Server

The Windows version of the CVW client will run under Microsoft Windows 95 and Windows NT 4.0. The Windows CVW client application is provided as part of a web distribution to make software distribution easier. The installation package comes with a default set of web pages and user installation instructions.

The Windows client can be found in the **cvw/win-cvw/bin/** directory of the web distribution. The following files are provided to you in the directory:

CVW40Installer.exe	Self extracting installer to install the Windows CVW client
Server.cvw	CVW server configuration settings
master.cvwprefs	Default cvw user preferences

The **install.html** web page located in the **cvw/win-cvw/** directory provides user installation instructions for downloading the installer program and installing the CVW client software on Windows. The URL to access the CVW client software will be **http://<yourServer>/cvw/win-cvw/install.html**. Links are provided to the installer program and to the CVW server configuration file, located in **cvw/win-cvw/bin**. The CVW server configuration file must be modified to reflect CVW server connection settings, as described in a previous section, titled "Configuring CVW Server Connection Settings". The **master.cvwprefs** file can be modified to set the desired default CVW preferences for your environment.

Providing Access to Multiple CVW Servers

If users have access to more than one CVW server, additional "Server.cvw" files can be placed in the **cvw/win-cvw/bin** directory, with associated links added to the **cvw/win-cvw/install.html** file.

An alternate method is to create a "Virtual Buildings" web page with links to the various "Server.cvw" files which users can launch directly from the web page and automatically connect to the CVW server. To enable the ability to automatically launch CVW from a web page,

- (1) add the CVW application type to your web server (See "Editing Your Web Server MIME Content Type to Support the .cvw Extension"), and
- (2) verify that users have the CVW mime type (**application/x-mitre-cvw**) identified as a helper application in their web browser (with the association to the **CVW.exe** application).

Editing Web Server MIME Content Type to Support the cvw File Type

To identify the CVW MIME type and .cvw extension to your web server, edit your HTTP server's configuration file to bind the suffix to the MIME Content-type. Examples for the CERN and Apache web servers are provided.

For the **CERN** web server, provide an "AddType" entry your **/etc/httpd.conf** file.

AddType .cvw application/x-mitre-cvw 8bit 1.0

For the **Apache** web server, add the MIME type to your **/conf/mime.types** file.

application/x-mitre-cvw cvw

Get the process id of your httpd (web server) parent process before restarting and verify that this is the correct HTTP server.

Restart the HTTP server with the new configuration.

kill -HUP <pid>

Example: kill -HUP 29299

----- we don't support this -----

The mime-db specification also supports macros that can be added to the edit and view application entries. These macros can be used to pass CVW information to your edit and view applications. The macros are specified below:

%A	Audio Multicast address
%a	Audio Multicast port number
%V	Video Multicast address
%v	Video Multicast port
%H	CVW Server hostname
%h	CVW Server port number
%D	Document Server hostname
%d	Document Server port number
%u	User name of current CVW user
%r	Room name of current CVW user
%S	CVW Server name (virtual building name)
%n	Client hostname
%%	Literal percent sign

----- we don't support the above -----