MDG Computer Services, inc.

http://www.mdg.com

Turn your MacOS or Windows NT computer into a powerful world wide web server with database publishing, user tracking and more.

Web Server 4D Reference Manual

Concept, Design, and Program
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Manual
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Inspiration from
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9th Edition

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4th Dimension 3.5.3, 4D Compiler 2.5.2

This manual was created with the following software:

Microsoft Word 6.0.1, Screen Catcher 1.0, ClarisWorks 4.0, Timbuktu Pro 3.0.2

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Welcome To Web Server 4D

Web Server 4D by MDG Computer Services, Inc. is a complete Web Server environment written entirely on top of 4th Dimension, a very powerful relational database for Macintosh and Windows NT. Running on top of a database means your server can detect if someone is a new user, how many times a page has been accessed and much more.

Web Server 4D is available in a standard edition and a developer edition. The developer edition requires the ownership of 4th Dimension and 4D Compiler. The standard edition does not require 4th Dimension - a merged copy of 4D is included free of charge.

About Web Server 4D

Since Web Server 4D (WS 4D) is built on top of 4th Dimension, there are many unique tracking features available. Below are some of the features of WS 4D.

WS4D has the following **standard** features:

- Intelligent Setup Agent - steps you through installing WS4D for the first time.
- Serves existing HTML, GIF, JPEG and all other files
- Serves different pages depending on domain or IP Address
- Serves different pages depending on Web Browser
- Buffering of Web Pages - very fast - no disk I/O
- Tracks New Users and Repeat Users visiting your server
- Tracks every page that every User has visited
- Tracks Page/Server client was at previously to visiting yours
- Tracks which Browsers clients are using by percentage
- Tracks which Domains clients belong to by percentage
- Tracks amount of data sent from your server
- Unlimited Custom Database Publishing - no additional software needed.
- Virtual Domains supporting Multi-Homing or Host Tag
- Virtual Domains Accounting
- Deny based on browser
- Referer Exceptions
- New Referer Email Notification
- Version Notifier - have WS4D notify you when a new version is available for download
- Ability to play different sounds when a page is served
- Security - Page can require Name and Password

- New HTML Tags supported to insert the current date, current time, page hit count, total server hits, browser type, page count, user page count, user visits, user first visit, user last visit, or user page first visit
- Supports basic clickable maps
- Email of forms posted to server
- Supports HTTP Cookies for Tracking New vs. Repeat Users
- Supports If-Modified-Since tag for speedier file delivery
- Automatic Email of daily page activity for any or all pages.
- Full MIME Support
- Runs CGI and ACGI applications
- Runs PostProcess and PreProcess applications
- Built-in GuestBook
- Keeps log file (ServerStats and Analog compatible)
- Realm Security Support with User & Group and tracking
- Returns Real-Time Statistics
- Reverse DNS and caching
- Listens on multiple ports
- Serves different pages for each port
- Embed local CGI or external URL within your pages
- Handles over 3 million hits per day
- Buffers Web Pages
- Caches Files
- Weather Agent - insert current temperature on your pages
- Supports Pop-up Page Navigation
- Automatically delivers pages in different languages
- Shows Recently Modified Pages
- Server Side File Includes - dynamically create HTML files
- Supports Multiple Index Names
- Deny Users, Denial of Service Prevention and Notification
- Displays Odometer Page Counts
- File Aliases

Note For a complete list of all the features of Web Server 4D, visit the following URL: **http://www.mdg.com/4dws/features/**

What's New in Version Web Server 4D 1.7

Web Server 4D 1.7 offers many new features over Web Server 4D 1.6, they are:

Powerful Unlimited Database Publishing abilities

(see page 113)

Here is a quick overview of the features:

- Define Searches, Results, Tables, required
- fields, sorting, records per page all from hidden HTML - no changes needed on the server.
- Picture to GIF on the fly conversion.
- Also can use a text field to reference an external gif or jpg file. If external file is not found, instead of a broken link at the browser, a text message that states "missing file123.gif".
- Ability to specify the height and width of the external file (great for showing athumbnail view of the picture.)
- Field Formatting (including Email and URL formatting)
- Database to HTML lists - store your HTML lists in an easy to modify database.
- Record Navigation (Next 10, Previous 10, Page 1 of 10)
- All results stored in external HTML files, so it is easy to make changes remotely
- Each record in the database can have an optional Name and Password, which is needed to enter before a record can be deleted or modified. This is entered by the user when they create a record
- Automatic Email When Record Added
- Ability to Import and Export Data
- No CGI, AppleScript, C++, Perl or other programming needed - all databases changes are embedded in hidden fields on your HTML forms
- Wicked Fast - no middleman, no cgi, no plugin, no external databases, just one application

Setup Wizard

(see page 27)

Makes setting up Web Server 4D a snap! Answer a few simple questions and WS4D will automatically be configured for you.

Email Notification for New Referers

(see page 70)

Automatically send an email notifying you when a new referer is used to link to a specific page at your site.. You will receive one email per page that contains the URL and user, the first time that this new link is clicked. This feature can be disabled for internal referers and can clean up search engines referers.

Embed Feature

(see page 93)

The embed feature allows you to grab text from any web page on the Internet and place it on any of your pages, no programming or CGI's required.

Deny Based on Browser Type

(see page 51)

There is a new threat to your web site, they are "site suckers". These programs allow someone to grab your entire site, while some of these programs are friendly, others are not. BlackWidow is a program that is not very friendly and can bring your server down to a crawl. Web Server 4D 1.6.3 has the ability to block these types of programs from accessing your site.

TCP Port Mapping to Folders

(see page 55)

Now you can map a specific port to different folders. So, http://www.mdg.com:80/ and http://www.mdg.com:8080/ can point to different root folders.

Improved security

Any file created by WS4D cannot be served over the web. Also, any files in the WS4D Settings cannot be served. Also, any file of type WWW∏ cannot be served - these are WebStar Config Files - present after you upgrade to WS4D from WebStar :)

Speed Increase

Writing Log files is not only buffered but now optimized when writing to disk. Also, if you have pages with <WS4D Tags>, those pages will now be served much faster, especially, if you more than 100 pages loaded into the cache.

Internet Config Support

Internet Config is a control panel that contains specific information regarding your Internet preferences (Email, server, etc.). Web Server 4D can now read these preferences when installing for the first time.

Note For a complete list of what is new with Web Server 4D 1.7, visit: http://www.mdg.com/4dws/1.7/

Web Server 4D For MacOS or Windows NT

There is a version of Web Server 4D that is compatible with both MacOS and Windows NT. Web Server 4D has the same feature set for both platforms. There are a few WS4D features that are only available for a specific platform. Throughout this manual, you will see either a MacOS or Windows icon if a feature is available only for that platform. If no icon is present, the feature is available in both platforms (features in both platforms is 98%).

Feature Present Only in MacOS version of WS4D.

Feature Present Only in Windows NT version of WS4D.

Note	Is Web Server 4D compatible with Windows 95? Web Server 4D will run on any 32 bit Windows operating system, so it will run, however, MDG is only supporting WS4D running under Windows NT. NT offers more stability and advanced features like Multi-Homing, which are not available on Windows 95.

Web Server 4D Developer Edition

For developers who require complete control of the Web Server OR need to integrate an existing database with Web Server 4D, they need the Web Server 4D Developer Edition.

Web Server 4D Developer Edition is identical to Web Server 4D, except uncompiled 4D source code is included, which allows complete customization of your web server (4th Dimension, 4D Compiler, 4D Insider required - now called 4D Desktop).

When purchasing the Developer Edition, additional documentation is provided for 4D programmers. This documentation will illustrate the inner workings of WS 4D and how to integrate existing databases with WS 4D.

Note	Additional information about WS4D Developer is available at http://developer.ws4d.com/

Additional Information Resources

MDG Home Page The WS 4D Home Page provides information , examples, product update information and the latest version of WS 4D. To access the WS 4D Home Page, use a WWW client (e.g. NetScape) to connect to the following URL:	http://www.mdg.com /
Information On URLs	http://www.ncsa.uiuc.edu/demoweb/url-primer.html
Information On Writing HTML Documents	http://www.ncsa.uiuc.edu/demoweb/html-primer.html
Internet Standards	http://www.mdg.com/4dws/Internet_Standards.html

Information On The Hypertext Transfer Protocol (HTTP)	http://info.cern.ch/hypertext/WWW/protocols/HTTP/HTTP2.html
Web Server 4D Mailing Lists http://mdg.com/4dws/mailing-lists.html or http://lists.ws4d.com/	Subject: Any To: W**S4D-Talk@sendit.com** Message: Subscribe WS4D-Talk This list is used to discuss operations/use of Web Server 4D. ========== Subject: Any To: **WS4D-Dev-Talk@sendit.com** Message: Subscribe WS4D-Dev-Talk This list is for customers using the Developer Edition. This list will contain 4D programming questions/information/tips. ========== Subject: Any To: **WS4D-Announce@sendit.com** Message: Subscribe WS4D-Announce this is an announcement only list. When new updates are available we will send a message to this list. ==========
Web Server 4D Tech Support Database	http://support.ws4d.com/

Getting Started

This chapter shows you how to install Web Server 4D software and start publishing your documents on the World Wide Web.

MacOS Requirements

- Apple Macintosh, Performa or Power Macintosh
- 12MB of RAM minimum, 16mb recommended (or more) The formula for RAM requirements is 10000K + (NumListens X 150K)
- 68030/68040 or PowerPC processor
- Hard disk with more then 20 MB of free space
- Macintosh system software version 7.0 or later
- MacTCP or Open Transport 1.1.2/1.2/1.3

Note	Open Transport 1.3 and System 8.1 are required to support true Multihoming for MacOS

Windows NT Requirements

- Intel 486 or Pentium Processor
- 24MB of RAM minimum, 32MB recommended (or more)
- Hard disk with more then 20 MB of free space
- NT 3.5.1 or NT 4.0
- TCP Configured

Network Requirements

The MacOS or Windows NT must have a full TCP/IP connection to a network or to the Internet.

If you are installing WS 4D on a local TCP/IP network, the IP Address can be obtained from the network administrator.

If you are connecting directly to the Internet through an Internet service provider (ISP), you need to obtain the IP Address from that provider. In addition, the service provider can usually register a domain name for you, provide Domain Name Service (DNS) services, help you with configuration and setup of your network and help you keep you network running smoothly.

Knowledge

Web Server 4D does not create your Web pages, but rather serves them to any client that requests them. You will already need to be familiar with designing HTML pages OR have an application that automatically creates HTML pages.

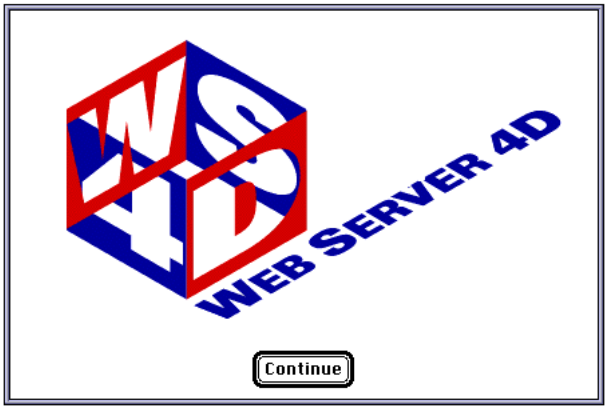
First Time Installation MacOS

This section will step you through installing Web Server 4D on your MacOS computer from a copy that was purchased over the Internet or from a disk copy.

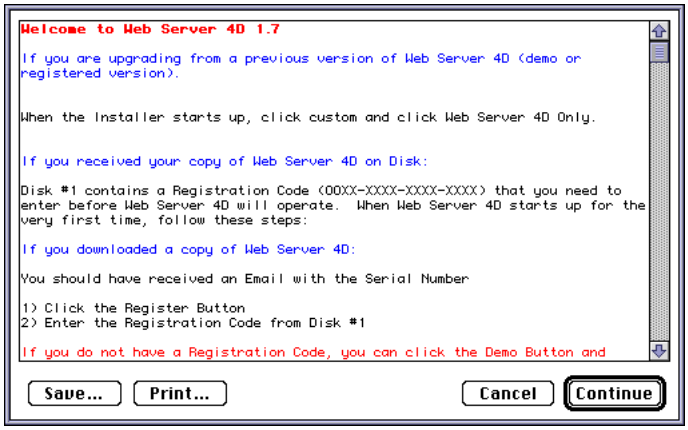
1. Insert the Web Server 4D Installer Disk #1 (if you ordered your copy electronically, you would have the Installer already on your hard disk)

2. Double-click the Web Server 4D Installer Icon.

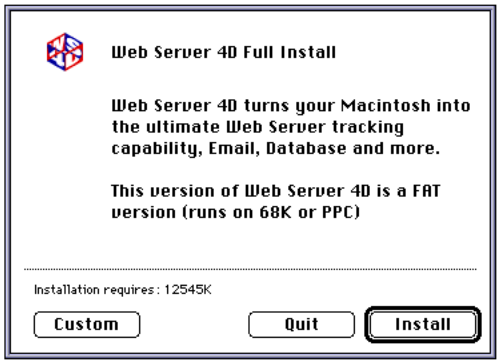
3. Click Continue Button at first screen.



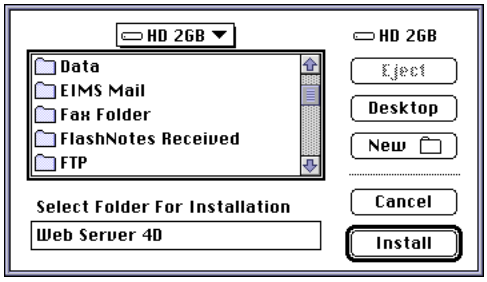
4. Click Continue Button



5. Click on Install button



6. Select the folder or enter a new folder name and location and click the Install button.



7. After installation is completed, Double click on the Web Server 4D icon that was installed on your hard disk.

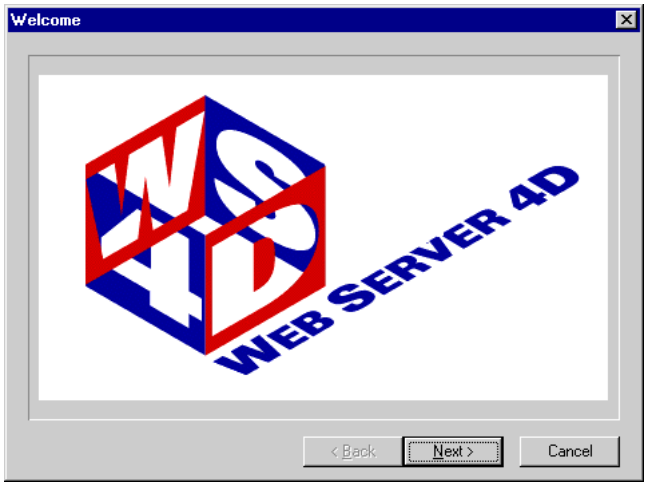
First Time Installation Windows NT

This section will step you through installing Web Server 4D on your Windows NT server from a copy that was purchased over the Internet or from a disk copy.

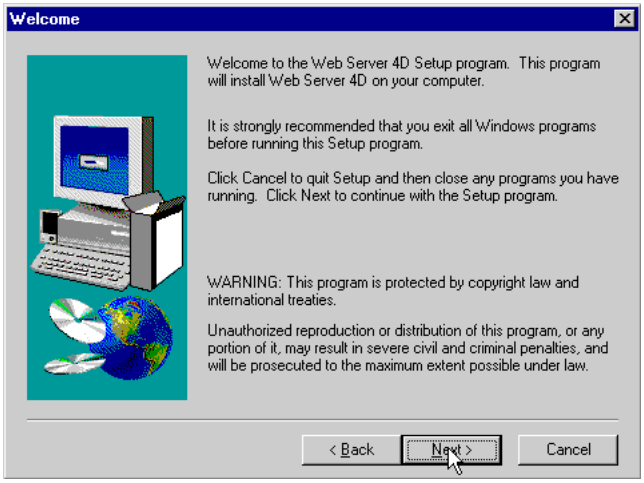
1. Insert the Web Server 4D Installer Disk #1 (if you ordered your copy electronically, you would have the Installer already on your hard disk)

2. Double-click the Web Server 4D Setup Icon.

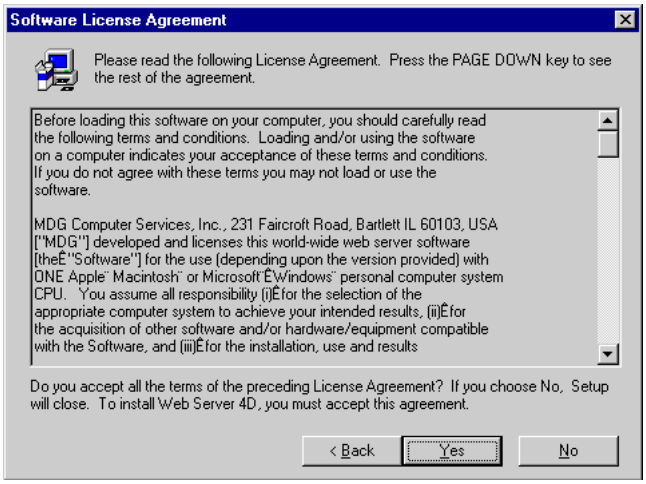
3. Click Next.



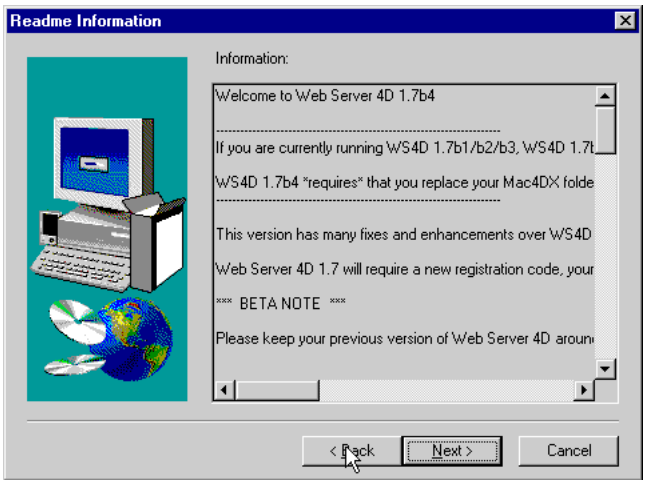
4. Click Next.



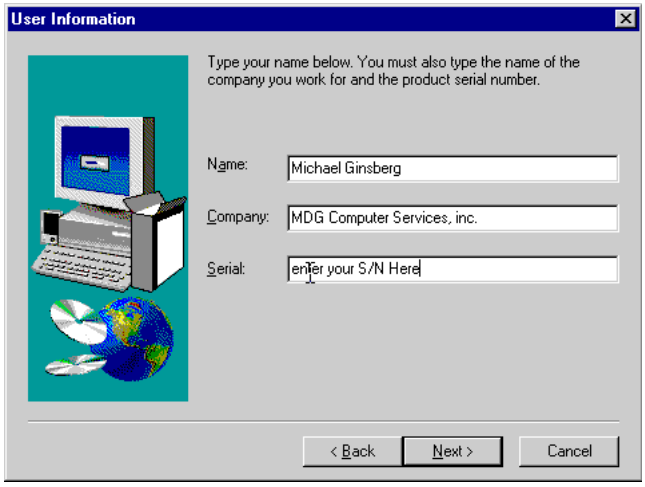
5. Click Yes.



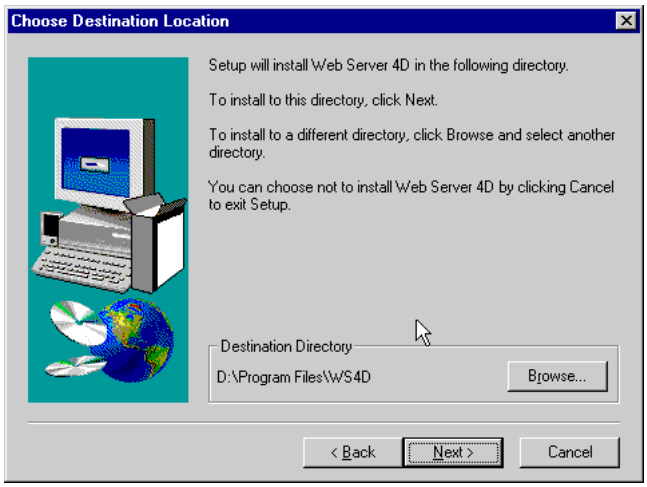
6. Click Next.



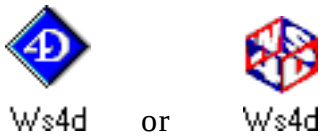
7. Click Next.



7. Click Next.



8. After installation is completed, Double click on the Web Server 4D icon that was installed on your hard disk.



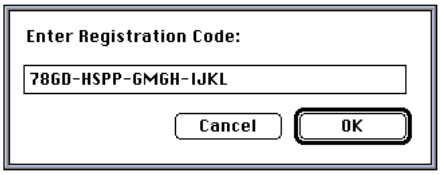
Registering Your Copy of Web Server 4D

After installing Web Server 4D for the first time, you will be presented with a window that will ask you to register your product or to run in demo mode.

1. After Web Server 4D starts up for the first time, you will see the following screen:

2. Click the Register Button:

3. Enter your Registration Code and click OK. Your Registration code is 16 characters with each series of 4 characters separated by a dash. The first two characters are numbers and the remaining are all letters.



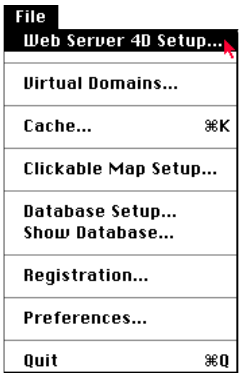
4. You should see a dialog box that looks like the one below. If you enter an incorrect Registration Code, you will see a dialog explaining that you entered an incorrect code and you will go back to step 1.

Do you want some free exposure for your new Web Server 4D site? Visit the URL below and submit your new site to our WS4D Customer Sites Database. Only sites running Web Server 4D can be added and your site will instantly be accessible. We use the Database Publishing feature of Web Server 4D to make this database work.

Note MacOS and Windows WS4D Registration Codes are not interchangeable. A valid MacOS Registration Code will only run a demo on WS4D for Windows (and vice versa). Also, a new registration code may be required for future versions.

Web Server 4D Setup Wizard

This section will step you through using the Setup Wizard that is built into Web Server 4D. The Setup Wizard will display 6 screens and ask you a few questions and automatically configure Web Server 4D for you.



Server URL

Wizard will show you the URL that you need to enter into a browser to access this server.

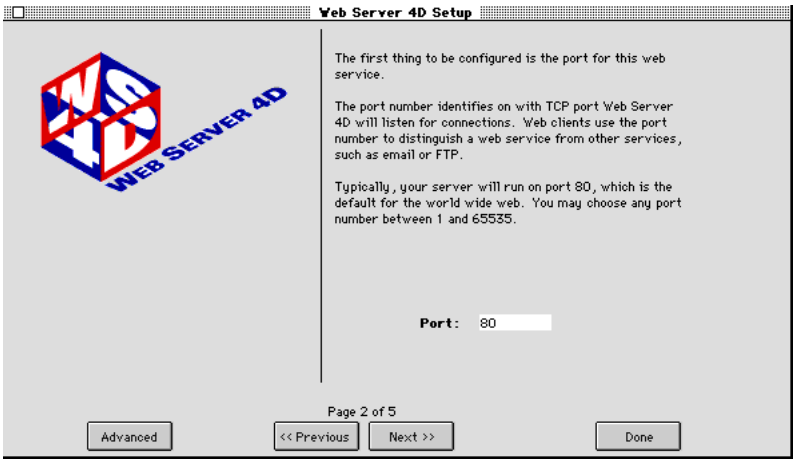
Note If an IP Address shows up on this page instead of a www name, you may need to contact your Network Administrator, ISP or DNS Administrator - your DNS may need to be updated.

Port

The first thing to be configured is the port for this web service.

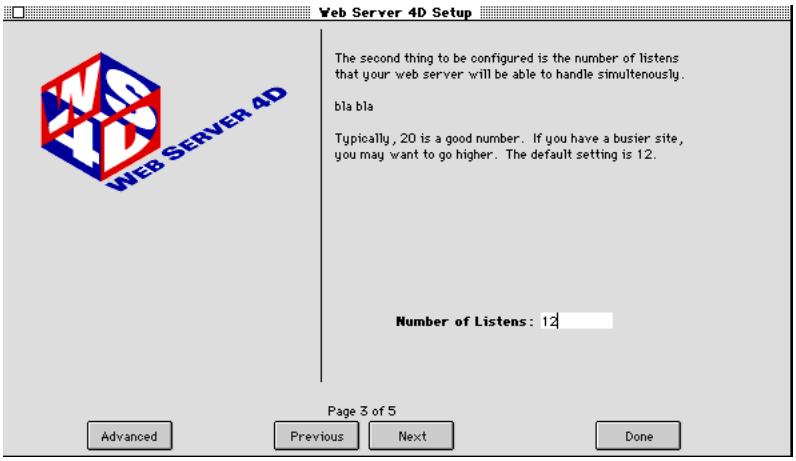
The port number identifies on with TCP port Web Server 4D will listen for connections. Web clients use the port number to distinguish a web service from other services, such as email or FTP.

Typically, your server will run on port 80, which is the default for the world wide web. You may choose any port number between 1 and 65535.



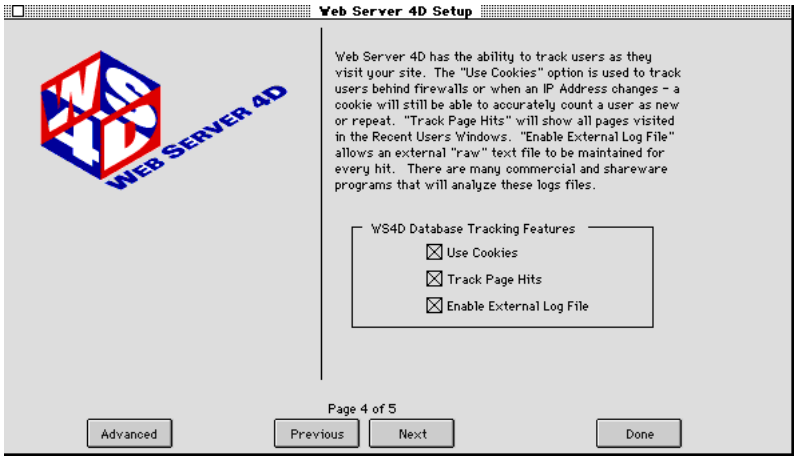
Number of Listens

The second thing to be configured is the number of listens that your web server will be able to handle simultaneously. Typically, 20 is a good number. If you have a busier site, you may want to go higher. The default setting is 12.



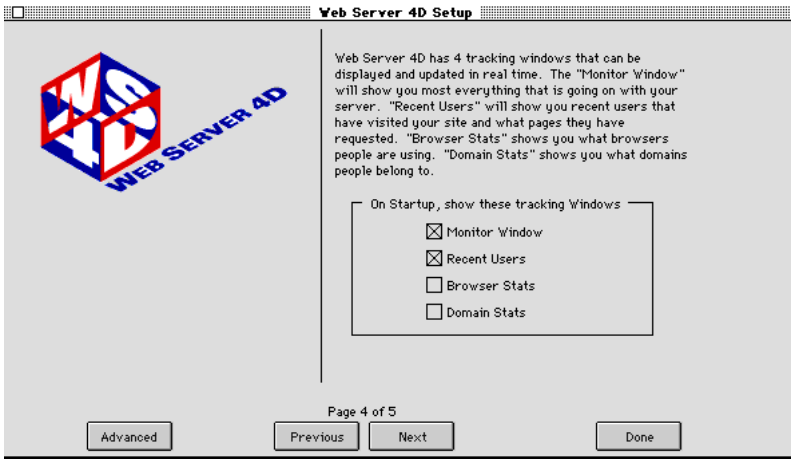
Database Tracking

Web Server 4D has the ability to track users as they visit your site. The "Use Cookies" option is used to track users behind firewalls or when an IP Address changes - a cookie will still be able to accurately count a user as new or repeat. "Track Page Hits" will show all pages visited in the Recent Users Windows. "Enable External Log File" allows an external "raw" text file to be maintained for every hit. There are many commercial and shareware programs that will analyze these logs files.



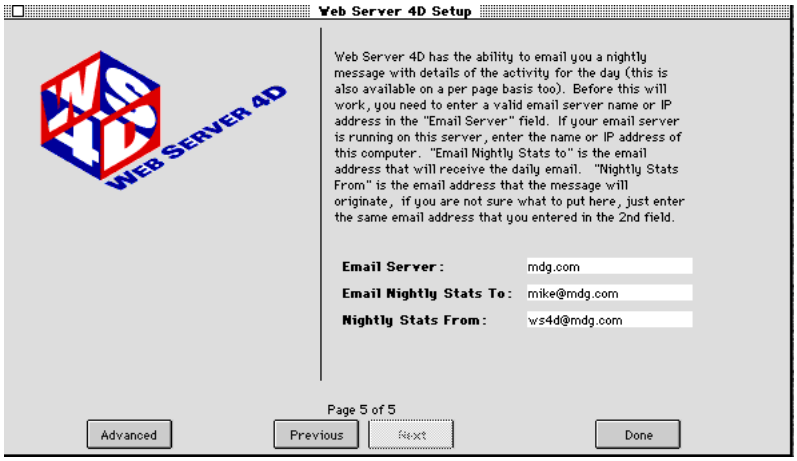
Tracking Windows

Web Server 4D has 4 tracking windows that can be displayed and updated in real time. The "Monitor Window" will show you most everything that is going on with your server. "Recent Users" will show you recent users that have visited your site and what pages they have requested. "Browser Stats" shows you what browsers people are using. "Domain Stats" shows you what domains people belong to.



Email Setup

Web Server 4D has the ability to email you a nightly message with details of the activity for the day (this is also available on a per page basis too). Before this will work, you need to enter a valid email server name or IP address in the "Email Server" field. If your email server is running on this server, enter the name or IP address of this computer. "Email Nightly Stats to" is the email address that will receive the daily email. "Nightly Stats From" is the email address that the message will originate, if you are not sure what to put here, just enter the same email address that you entered in the 2nd field.


Web Server 4D Setup
WEB SERVER 4D
Web Server 4D has the ability to email you a nightly message with details of the activity for the day (this is also available on a per page basis too). Before this will work, you need to enter a valid email server name or IP address in the "Email Server" field. If your email server is running on this server, enter the name or IP address of this computer. "Email Nightly Stats to" is the email address that will receive the daily email. "Nightly Stats From" is the email address that the message will originate, if you are not sure what to put here, just enter the same email address that you entered in the 2nd field.
Email Server:
mdg.com
Email Nightly Stats To:
mike@mdg.com
Nightly Stats From:
ws4d@mdg.com
Page 5 of 5
Advanced
Previous
Next
Done

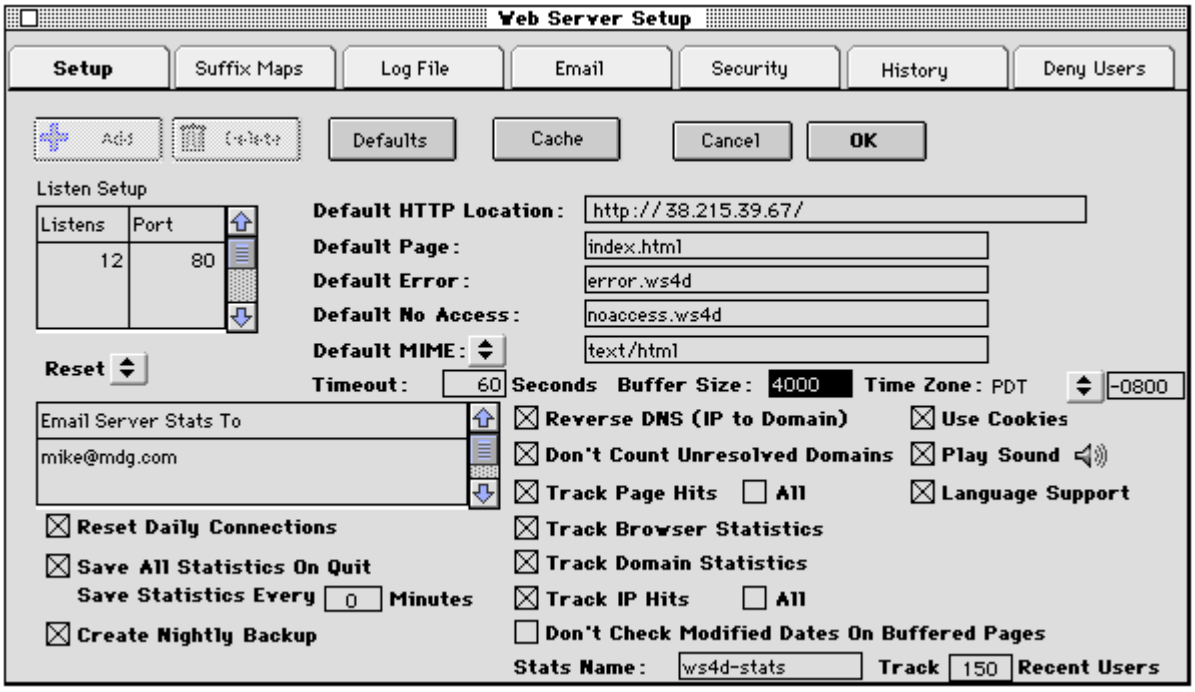
Web Server 4D Advanced Setup

This section will step you through configuring the advanced settings in Web Server 4D. It covers these important configuration areas:

- Defining the number of listens and ports for your server
- Setup administrator Email address
- Define the Default Server Location
- Define the default page that is served (index.html is default)
- Define the default error document that is returned
- Define the default MIME type that is returned
- Define the number of seconds that a connection will timeout
- Enable Reverse DNS
- Enable Page Tracking
- Enable Browser Statistics Tracking
- Enable Domain Statistics Tracking
- Enable IP Tracking
- Editing Suffix Mapping
- SMTP Setup
- Security Setup (Editing Header and Footer of Secure Page Form)
- Server History

Server Setup

The Web Server Setup screen allows basic setup and configuration. This screen will automatically be filled in for you.



Listens

This parameter specifies the maximum number of listening connections that WS 4D uses to handle incoming connections.

Note Each Listen takes approximately 150K of memory. Make sure that you increase the amount of memory WS 4D requires if you have many listens. The formula is 10,000K + (NumListens X 150K)

Port

This parameter specifies the port number WS 4D listens to for incoming connections. The default port is 80.

Email Server Stats To

Every night, Web Server 4D will automatically send an Email message to the Email address that is entered in this field. The Email message will contain the number of new hits and the number of repeat hits as well as other useful information.

Reset Daily Connections

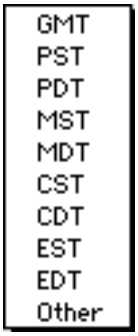
When this checkbox is checked, the new counter and repeat counter for each page, the number of connections and the data moved will be reset at midnight every day.

Save All Statistics On Quit

When this checkbox is checked and the Quit button is selected, WS 4D will save the Browser Window, Domain Window, Page Tracking and Recent Users Windows.

Time Zone

This is the Time Zone for your server. It is important that this be set correctly, so that clients can buffer pages correctly. The box to the right of the time zone pop up is used to enter your GMT time.



Default Server Location

This is your server's IP Address or DNS Name. Your IP Address will automatically be filled in for you when the program starts up for the first time.

Default Page

The default page is the file that will be returned when accessing a URL that points to a folder name instead of a file. The default for this field is index.html. You would need a file named index.html in your WS 4D folder and every folder within.

Wouldn't it be great if you could have your web server automatically deliver a home page for a folder, and not have each folder's index page
be named the same?

Starting with Web Server 4D 1.0.5, you can enter multiple index pages in the Web Server 4D Setup area and if there is a match for any of the
indexes, the page will be properly served.

Instead of entering index.html, or default.html, you can enter:

index.html, index.htm, default.html, default.htm, home.html,home.htm

If any of the above index pages are found, they will automatically be served!

Default MIME

The default MIME that will be returned for unrecognizable file types.

Timeout

The number of seconds an inactive connection will reset.

Buffer Size

The chunk size of data that will be sent over TCP. If you set a large Buffer Size (8000-16000), users at faster connections will see improved speed, however, users connecting at slower connections will slow down faster connections. The valid settings are 512 - 32000. We recommend a setting of 2048, however, you may experiment to see which settings works best for your environment.

This parameter specifies how many bytes WS 4D can send in a single MacTCP write to the client. The minimum buffer size is 512, and the maximum is 32000. The default is 4096 bytes.

With a relatively large buffer size, files take a longer time to transfer over slow connections. You can adjust the buffer size to accommodate slower connections. The smaller the buffer size, the faster WS 4D can send a buffer of data to a slow client without slowing down all the other connections. Unfortunately, there is a point of diminishing return, where the smaller buffer begins to cause WS 4D to spend more time thrashing through connection servicing than sending data. Usually a value between 512 and 2048 works well for slow clients. If you have a lot of high speed clients, WS 4D performs better with larger buffer size settings like 4096 or 8192. Experiment to determine the optimum size.

Reverse DNS

With this checkbox checked, WS 4D will be able to convert an IP Address into the DSN Name. This option is required for certain operations in WS 4D. Performing Reverse DNS normally can slow a Web Server down to a crawl, however, WS 4D caches all Reverse DNS into a file so that future lookups do not have to be performed.

Use Cookies

With this checkbox checked, WS 4D will automatically send a HTTP Cookie with every outgoing HTML file. A cookie is used for tracking a user even if their IP Address changes from connection to connection. A WS4D Cookie is stored as "WS4D_Cookie=12/25/96_09:00:00_15", which indicates that first time that this user visited our server.

Play Sounds

With this checkbox checked, WS 4D will play a small clicking noise with every connection. Very useful if your server is near by and you want to monitor the activity without watching the screen.

Language Support

With this checkbox checked, WS 4D will honor the language preference that each browser requests and serve the file in the correct language automatically. See Language section for more information.

Use SetIdle

This command will pause inactive connections for XX number of ticks (60 ticks = 1 second). By enabling this and having inactive connections pause for 60 ticks, active connections will get more processing time. As soon as an inactive listen becomes active, the SetIdle command will be changed to 5 ticks, when the connection is closed, it will go back to the setting that you pick.

Track Recent Users

This allows you to specify the number of users that will be tracked in the recent users window (which can also be returned via browser). 150 is a good number to track.

Track Page Hits

With this checkbox checked, WS 4D will track the new versus repeat tracking for every page that is setup under Web Page Setup.

Track Page Hits ALL

With this checkbox checked, WS 4D will track the new versus repeat tracking for every page that is served from your Web Server.

Track Browser Hits

With this checkbox checked, WS 4D will track which Web Browsers are visiting your server and list them by percentage.

Track Domain Statistics

With this checkbox checked, WS 4D will track which domains each user resides from and list them by percentage. If a client's router is not configured to return the DNS name, Unresolved will be returned.

Track IP Hits

With this checkbox checked, WS 4D will track the IP Address, last date, and number of accesses.

Track Inside Referer

With this checkbox checked, WS 4D track pages at your site that refer to pages at your site. Most sites will not want this checked, and will only want to track referring sites outside your site. This feature is also honored when the Email Notification on New Referer feature is enabled for a page.

Stats Name

WS4D can return much statistical information via a browser. This name entered here will be the URL that you enter to obtain these stats. The default is ws4d-stats, for a demo, visit http://www.mdg.com/ws4d-stats

Don't Check Modified Dates on Buffered Pages

Any page that is buffered into memory (using Web Page Setup) will automatically be checked to see if the file on disk is more current then the one buffered into memory. By checking this checkbox, the extra date check will not be performed and the file will be served slightly faster. HOWEVER, if you check this checkbox, you will be responsible for manually updating any updated HTML files. Do Not check this checkbox if you are using the <DOC LAST MODIFIED> tag.

Reset

This pop-up box allows you to clear certain tracking.

Create Nightly Backup

When this checkbox is checked, WS4D will automatically backup all your information, so that an emergency restore will be automatic (see Appendix B).

Suffix Mapping

Suffix mapping determines how the WS 4D server returns data to a WWW client. It lets you specify an action and the MIME type for processing the URL and returning data, based on the filename suffix in a URL or on the Macintosh file type and creator fields of a retrieved document.

To set up mappings based on suffixes, you have to include a filename suffix in the names of your documents. If you prefer not to rename documents you can set up mappings based on the Macintosh file type and creator fields instead. If WS 4D does not find a filename suffix it examines those fields and looks for a relevant mapping.

Suffix mapping can be used for more than handling standard file or binary transfers. For example, suppose certain files contain Kanji characters. You can name all of those files with the same suffix and then specify the appropriate MIME type for handling 16-bit characters.

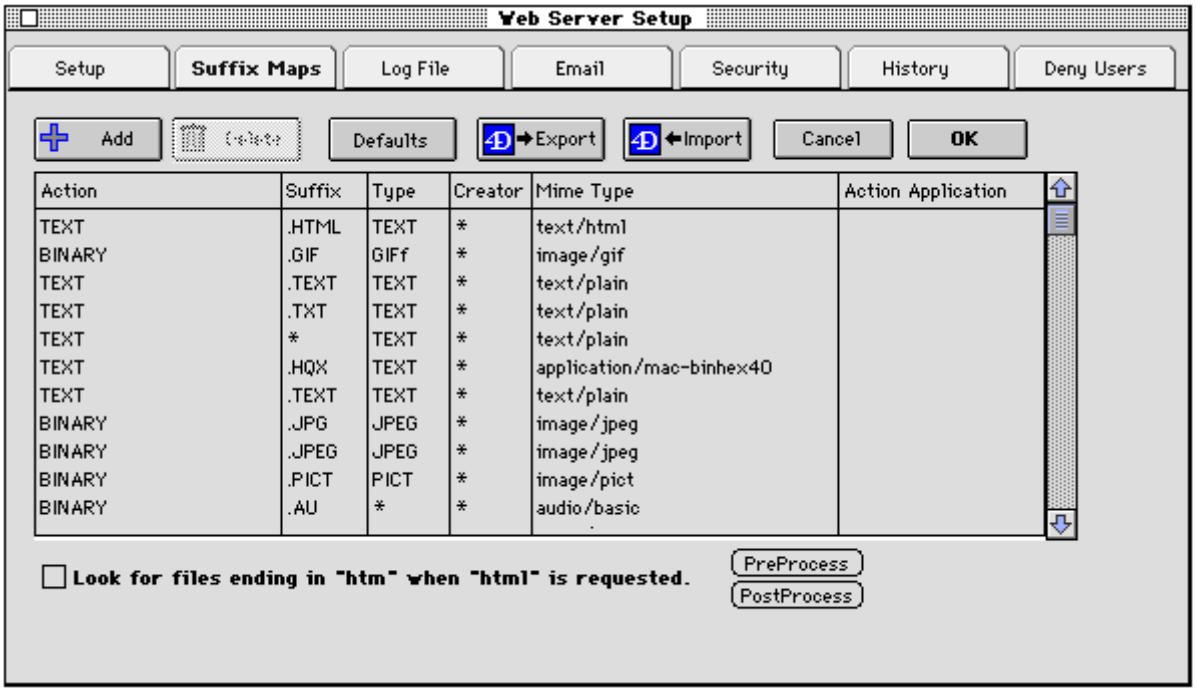
Choose Web Server 4D Setup from the File menu and click on the Suffix Mapping button.

The Suffix Mapping dialog box lets you add, delete or modify suffix mappings.

How Suffix Mapping Works

The server fulfills a URL request and uses the first suffix mapping it finds that matches the document's filename suffix, file type, and creator (where an asterisk matches anything). If

it does not find a match in the suffix mapping list, it returns the data as text using a default action and MIME type. The default MIME is defined on the Setup page.



Action	Suffix	Type	Creator	Mime Type	Action Application
TEXT	.HTML	TEXT	*	text/html	
BINARY	.GIF	GIFf	*	image/gif	
TEXT	.TEXT	TEXT	*	text/plain	
TEXT	.TXT	TEXT	*	text/plain	
TEXT	*	TEXT	*	text/plain	
TEXT	.HQX	TEXT	*	application/mac-binhex40	
TEXT	.TEXT	TEXT	*	text/plain	
BINARY	.JPG	JPEG	*	image/jpeg	
BINARY	.JPEG	JPEG	*	image/jpeg	
BINARY	.PICT	PICT	*	image/pict	
BINARY	.AU	*	*	audio/basic	

Action

The Action pop-up list in the Suffix Mapping screen has these options:

TEXT Returns the file using the TEXT transfer method.

BINARY Return the file using BINARY transfer method, without modifying the contents of the file . Only the data fork of the file is transferred

SCRIPT Loads and executes the AppleScript specified in the URL. The result of the script's execution will be returned to the client as TEXT with the specified MIME type.

CGI Loads and executes the CGI application in the URL. The CGI Application is expected to return a legal HTTP/1.0 header and any response information and return it to Web Server 4D. Only one CGI can be executed on the server at one time

ACGI Loads and execute the ACGI application specified in the URL. Application is expected to return a legal HTTP/1.0 header and any response information and return it to Web Server 4D.

ACTION Load and execute the associated action ACGI application, based on particular suffix.

File Suffix, File Type and File Creator

Web Server 4D uses a document's Suffix, Type and Creator to determine which action and which MIME type to use while sending the file.

MIME Type

MIME Type is information transmitted in the HTTP/1.0 header to indicate what type of file is being returned. This information allows the client to correctly launch or set the file type.

Look for files ending in "htm" when "html" is requested

With this checkbox checked, WS 4D will look for a file ending in .htm if the file ending in .html is not found. If HTML files are created on DOS machines, there is only a 3 character extension (.htm), by checking this checkbox, you will not have to change your filenames.

PreProcess

Use the PreProcess button to select an external application that will be executed before any URL is processed by the server. If the preprocessor returns any data to Web Server 4D, Web Server 4D will pass this returned data back to the client and not process the connection. If nothing is returned by the PreProcess application, Web Server 4D will process the connection.

PostProcess

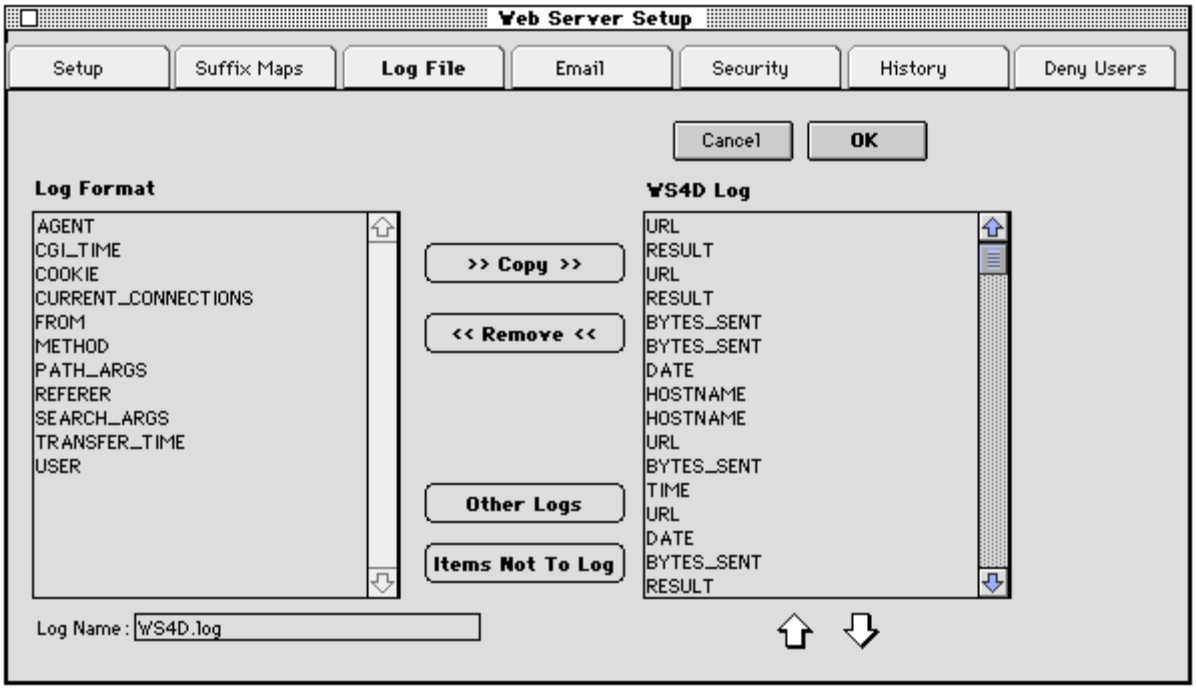
Use the PostProcess button to select an external application that will be executed after connection has been processed and closed.

Log File

Log File allows you to define what type of information to include in the log file entries. The log file is in the same folder as Web Server 4D. Each transaction that Web Server 4D handles will be logged in the log file.

Entries in the log file are separated by tabs, and individual entries end with a carriage return. There are many excellent 3rd party log analyzing programs available, we recommend one of the following:

FunnelWeb
http://interedu.com/royalsoftware/descriptions/funnelweb.html
ServerStat
http://www.kitchen-sink.com/ss.html
Analog
http://www.statslab.cam.ac.uk/~sret1/analog/



DATE	The current date
TIME	The current time
RESULT	The results of the request, which may be OK, ERR! Or PRIV.
HOSTNAME	The name of the WWW Client's computer (if DNS successful will be in www.domain.com format, otherwise IP Address will show)
URL	The requested URL path
PATH_ARGS	The path arguments to the URL (text after a dollar sign)
SEARCH_ARGS	The search arguments to the URL (text after a question mark)
METHOD	The HTTP method, usually GET or POST.
BYTES_SENT	The number of bytes transmitted
TRANSFER_TIME	The number of ticks required to complete the transmission.
AGENT	The browser being used

USER	The name of the remote user if authentication was required
FROM	The contents of the From Field in the request, usually an Email address (not all browsers support this!)
REFERER	The name of the document that was used to access the page.
CGI_TIME	This is the amount of time that the CGI required to process
COOKIE	The cookie value that was assigned by WS4D to this client. A WS4D cookie looks like this: WS4D_Cookie=6/10/96_23:13:58_24495180 This translates into the first date and time that the user visited the server, the number after the time is a connection ID number that was assigned to the connection.

Note CGI_TIME and COOKIE are specific to Web Server 4D, 3rd party programs may not recognize this information

Other Logs

This button allows you to specify directories that need separate logs. For example, a log file is created for ALL transactions and is saved in the same folder as Web Server 4D. You may need to an additional log file for specific folders and track only the activity for this folder.

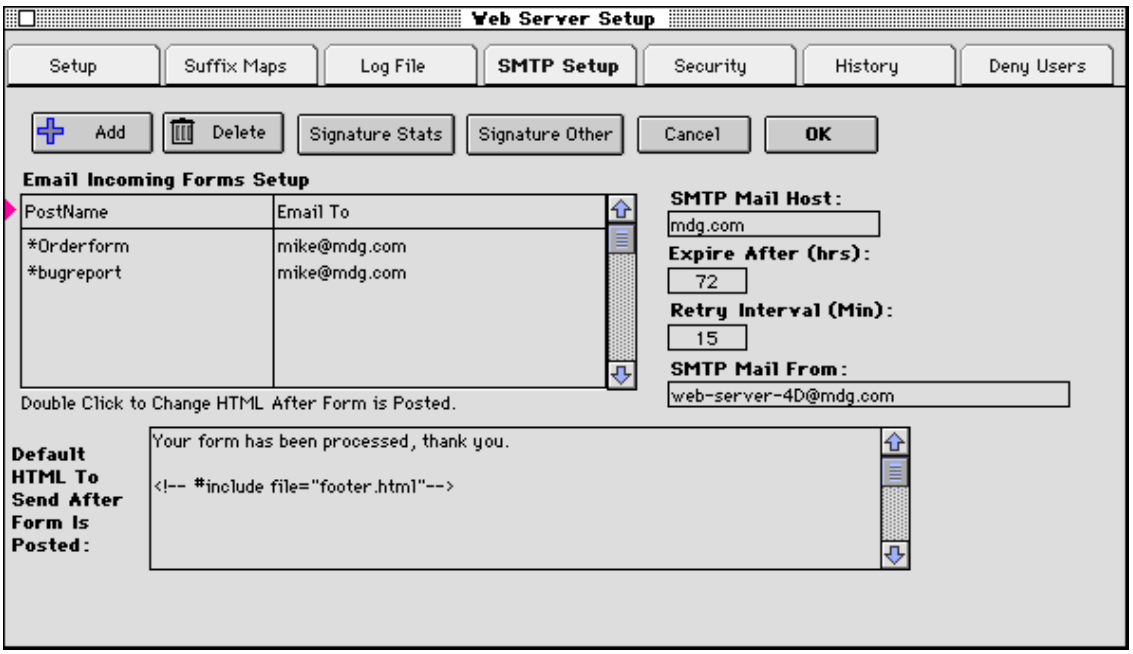
Items Not To Log

This button allows you to specify files not to write to your logs files. A good example would be to specify .GIF or .JPG, that way your graphic files would not be logged.

Note If you have enabled separate logs for your different virtual domains, the names of the virtual domains will appear in the Other Logs Option.

Email Setup

Email Setup allows you to define a mail host where Email messages will be sent, the interval for send attempts, return address for outgoing Email and defining an Email address for any incoming posted form.



Each defined form is double-clickable

Post Name

This is the name of the incoming form that will be posted to this server. The post name must start with an asterisk (*)

Email To

This is the Email address to which a matching posted form will be sent. You may have duplicate Post Names for multiple Email addresses.

HTML To Send After Form Is Posted

This is the HTML code that will be sent AFTER a form has been received. If you desire to have different HTML for each form, double click on the PostName and you can enter HTML specifically for the form. If no specific HTML is entered, the default will be used.

SMTP Mail Host

Web Server 4D requires a mail host to pass all messages to. This can be a Unix server or a Macintosh Running MailShare or Apple Internet Mail Server. This can be entered as the IP Address or DNS name.

Expire After (hrs)

The number of hours a message will stay in the que before being deleted (default is 24 hours).

Retry Interval (Min)

After a failed attempt of delivery an Email message to the mail host, this is the number of minutes before trying again (default 15 minutes).

SMTP Mail From

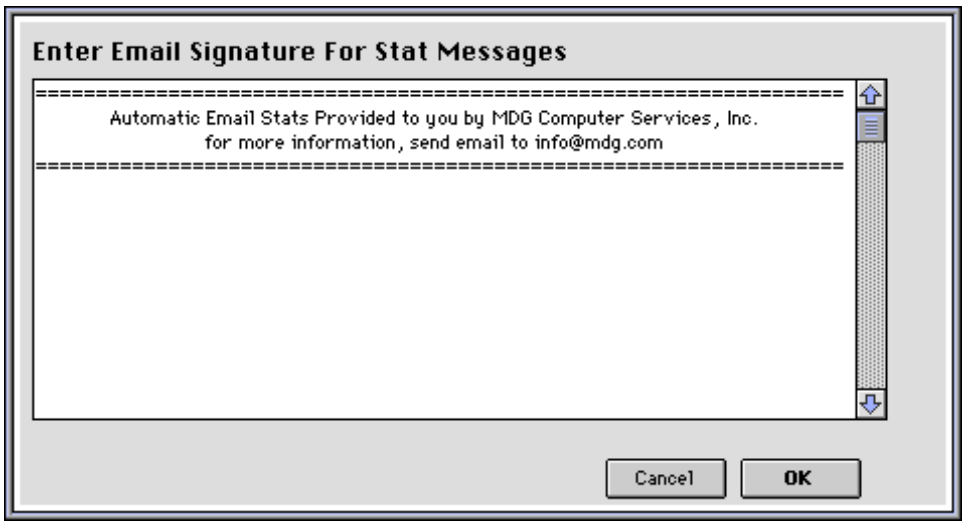
This is the return address for all mail that is sent from WS 4D.

Signature Stats

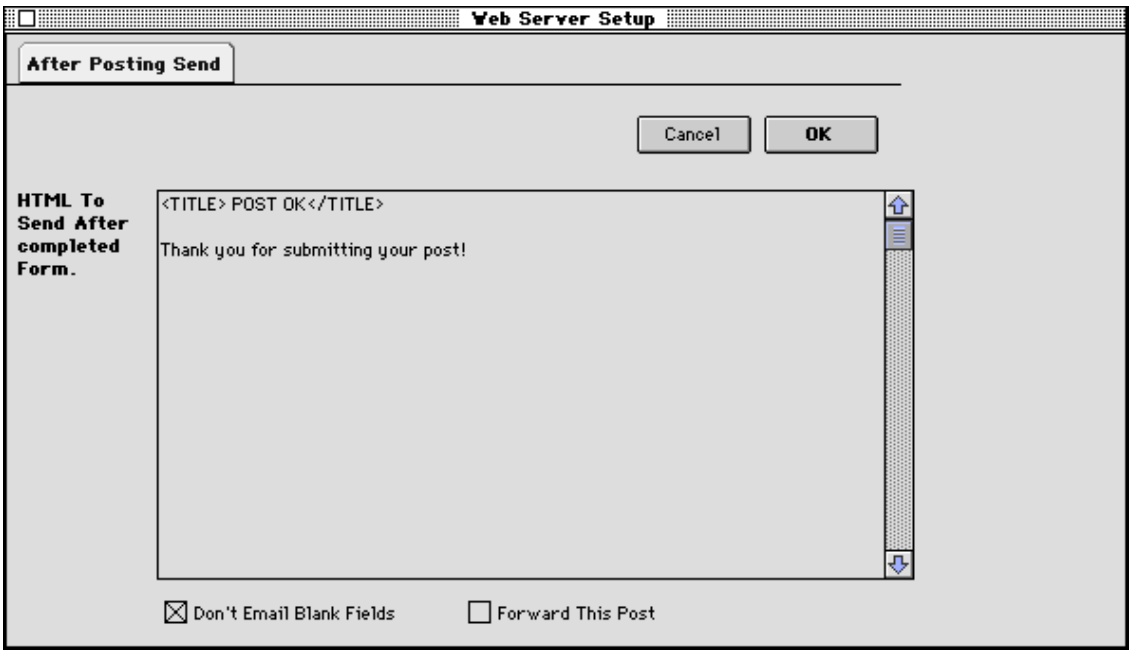
This is the default Email Footer that is added to every outgoing Statistical Email Message.

Signature Other

This is the default Email Footer that is added to every outgoing Email Message (except for Statistical messages)



Double-clicking on any post form, brings up a form that allows you to customize the HTML that is returned to the user and other configuration options specific for this posted form.



HTML To Send After Form Is Posted

This is the HTML code that will be sent AFTER this form has been received.

Don't Email Blank Fields

When an Email is being generated from a posted form, if this checkbox is checked (available after double clicking on a PostName), blank fields will not be sent.

Forward This Post

When this checkbox is checked, the incoming form will automatically be forwarded based on fields on the form. This button would allow you to have a form that automatically subscribes or unsubscribes users from a mailing list. Look in the appendix for more information on how to use this feature

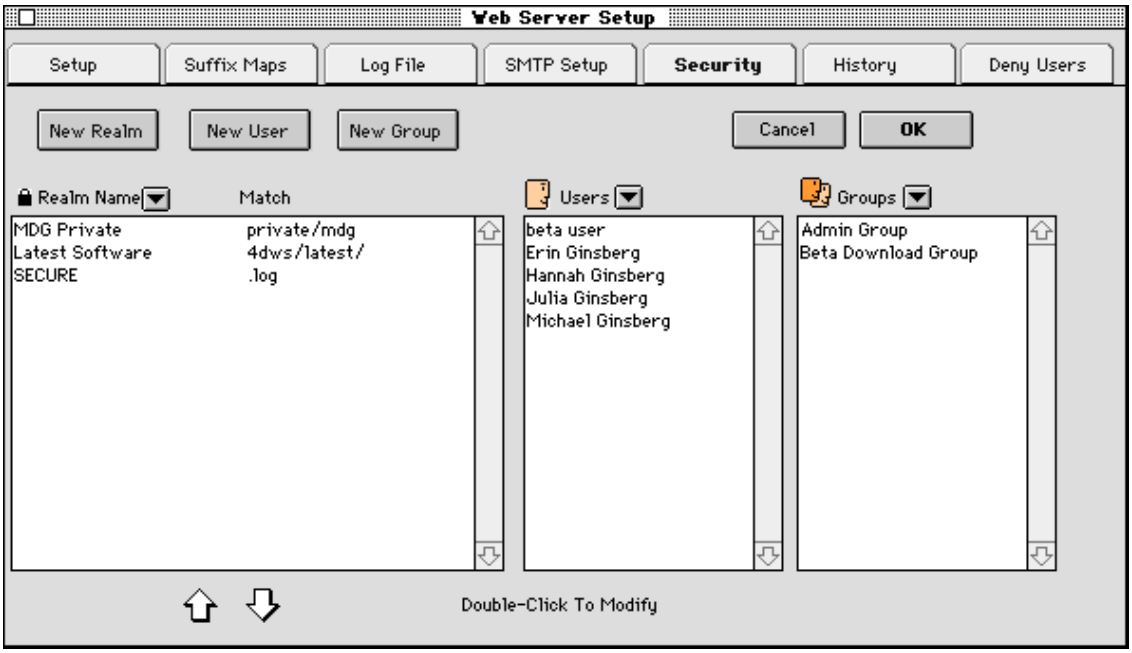
Security Setup

Web Server 4D supports basic HTTP Authentication. which supports realms, users and groups. When security is activated for a realm (which can be a folder or a file), a dialog box will be presented to client asking for a valid name and password. After a valid name and password is entered, the requested page will be displayed. Users will only have to enter the

name and password once, most browsers will remember the user name and password and it will automatically be sent with future page requests.

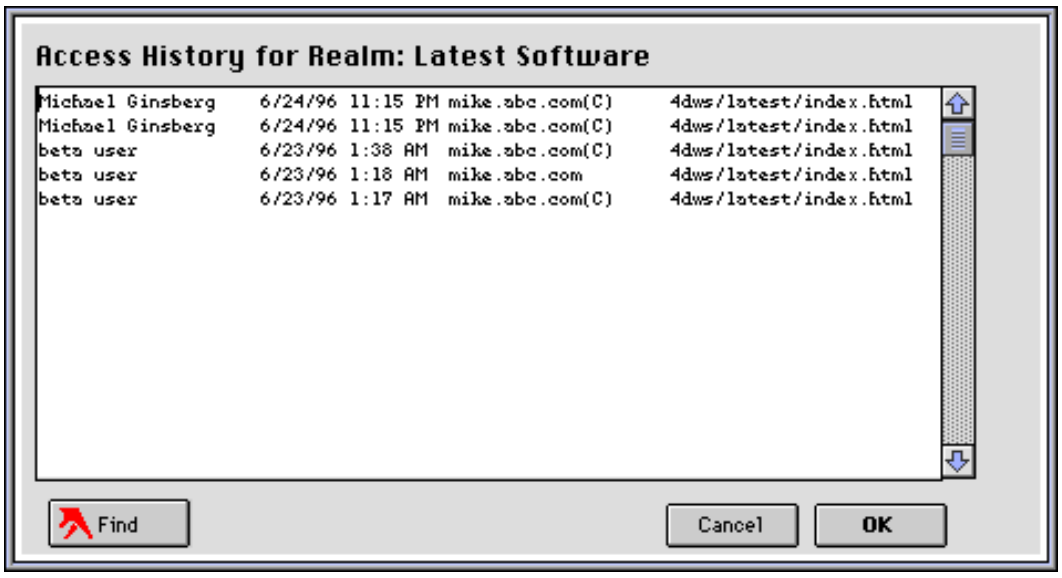
Security Main Setup

The main setup screen allows adding new realms, users or groups. To modify an existing entry, double click on it. The order of the realms is important and can be modified with the arrows. When Web Server 4D is checking realms, the top of the list is first.



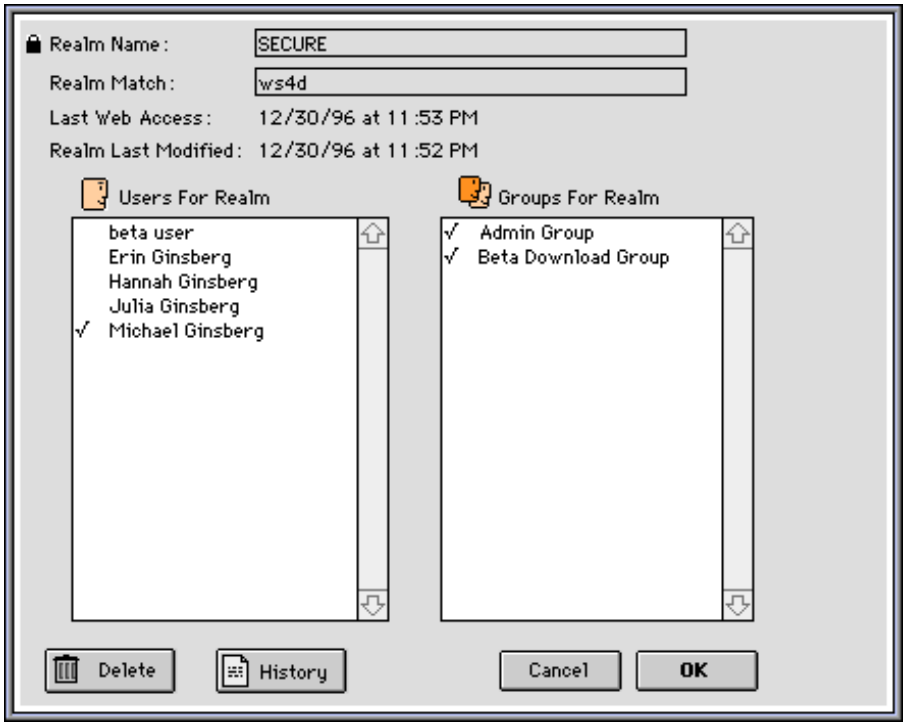
History

History is automatically maintained for each realm, user and group. The history will track different information based on realm, user or group. For example, the User history will show track each visit by the number of visits.



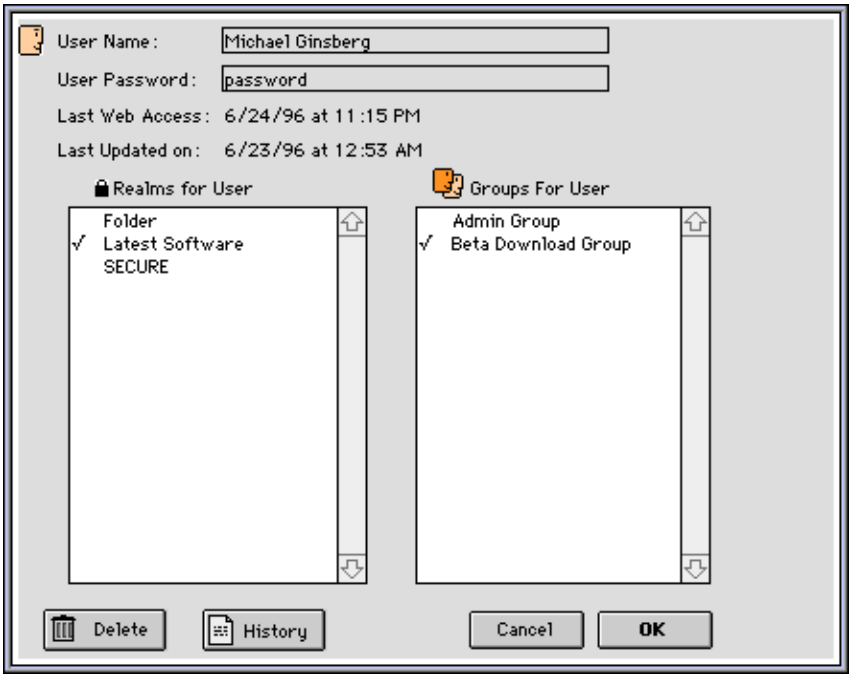
Realms

A realm is way to divide your files and folders into multiple security realms. You can require user name/ password authentication to access all files with the same realm. A realm groups folders and files by name. URLs that contain a string that matches the entry in the Realm Match field are authenticated using the password and user name assigned to that realm. The Realm Name that you type in will be presented to the user in the authentication dialog box.



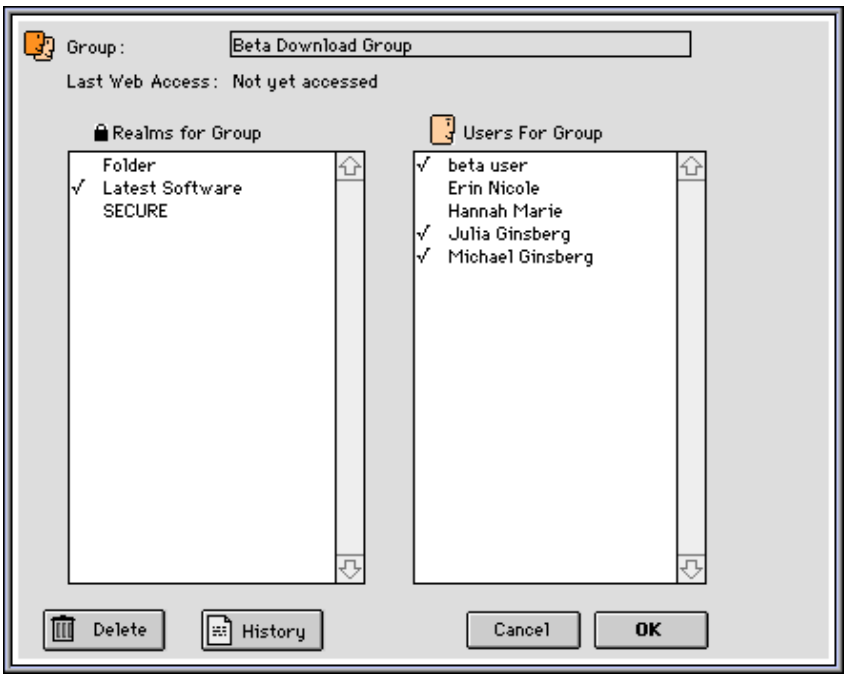
Users

The User screen allows entry of the user name, user password and the ability to select which realms and groups that this user belongs. The last web access and the last time that the user was updated is automatically tracked. The History button will show a history of access for this user.



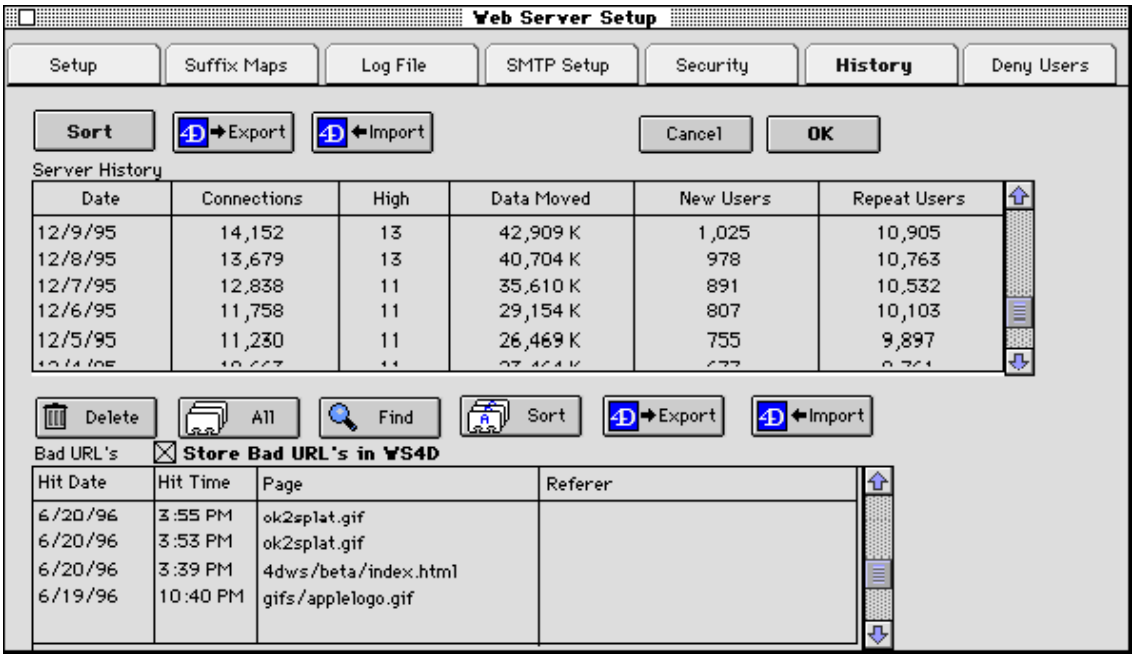
Groups

The Group screen allows selection of which users and realms a group belongs. The last web access and the last time that the user was updated is automatically tracked. The History button will show a history of access for this user.



History

Web Server 4D tracks your daily traffic for your Web Server. This page is automatically updated at the end of every day.



Server History

Your server history by date, the number of connections, the high number of connections, the amount of data moved, the number of new users and the number of repeat users will be display.

Bad URL's

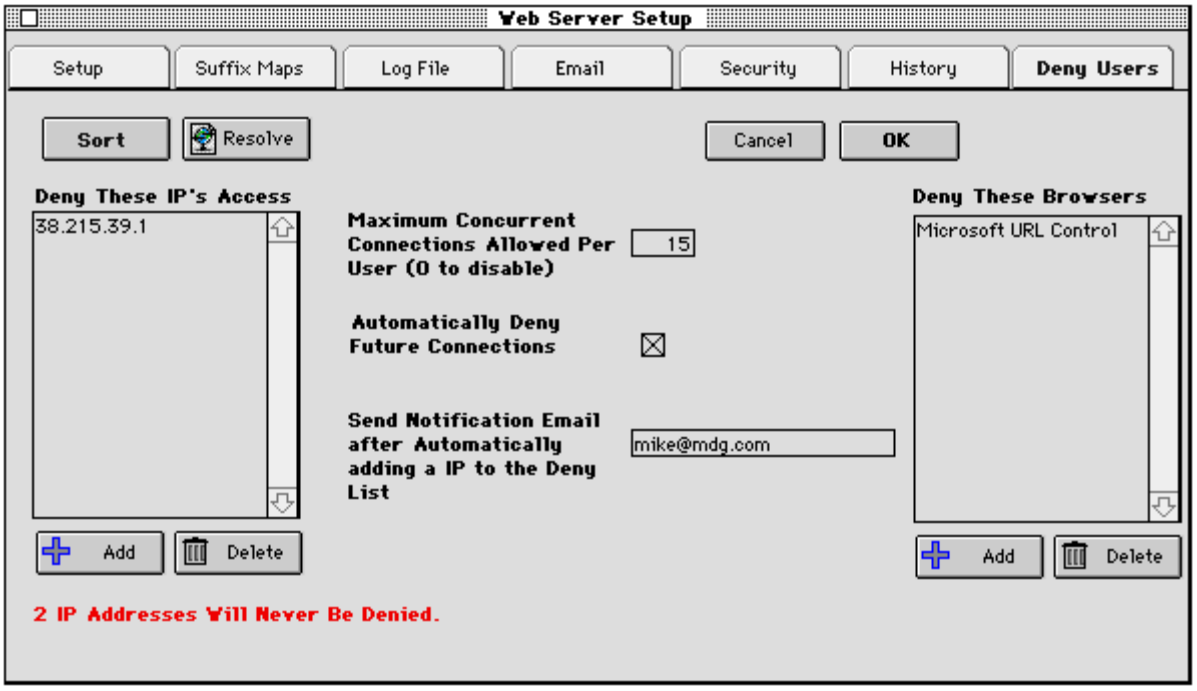
Each bad URL will be listed here. A bad URL is defined as a document that was requested that didn't exist on your server. If you double click on the bad URL, you will see the IP Address of the person requesting the document.

Store Bad URL's in WS4D

When this checkbox is checked, all bad URL requests will be stored in the Web Server 4D database. If you need to ability to search on bad URL requests, you may want to store them in the database, otherwise, DON'T check this checkbox.

Deny Users

Web Server 4D has some powerful features for denying users and preventing users from opening to many connections and preventing others from connecting. WS4D has the ability to block specific IP Addresses or IP range, define the maximum concurrent connections allowed per user, automatically deny future connections from anyone who exceeds the maximum and send an Email when someone is automatically added to the deny list.



Maximum Concurrent Connections

The total number of concurrent connections that any one IP Address can connect to your server at a given moment. Most browsers will open up to 4 connections at one time. It is recommended that you set this number to 15.

Automatically Deny Future Connections

If a specific IP Address exceeds the limit that is specified, the user can be blocked out from future connections.

Send Notification

When a specific IP Address is automatically added to the Deny List, an notification email can be informing you.

```
Subject: Added 204.137.245.253 To Deny List!

Sent: 11/19/96 6:18 AM
Received: 11/19/96 12:19 AM
From: web-server-4D@mdg.com
To: sales@mdg.com

At Tuesday, November 19, 1996 at 12:19 AM 204.137.245.253 was
automatically added to the deny list, since there was a total
of 15 connections from this IP address.
```

Deny These Browsers

This feature allows you to deny certain type of browsers from accessing any of your pages. Why would you want to do this? Some browsers really are not browsers - but instead are site suckers. These site suckers will suck every page from your site - some are very unfriendly to servers, now you can prevent them from accessing your site and disrupting your server.

Preferences

Web Server 4D has built-in Preferences that may be defined.

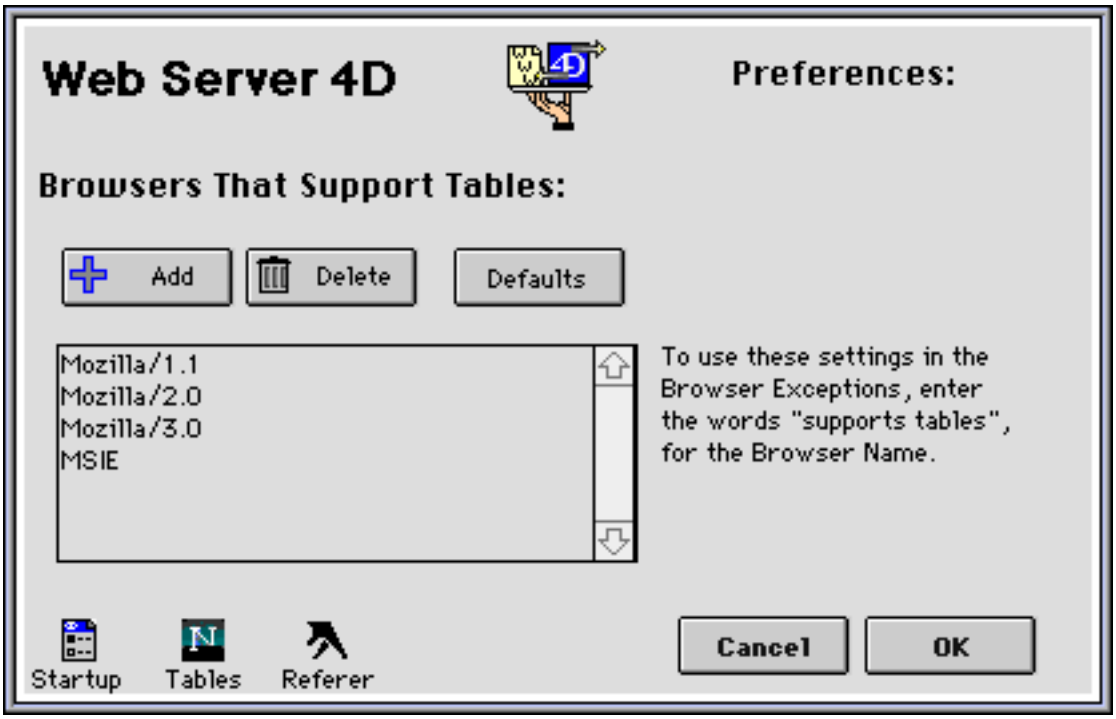
Note	To erase all preferences (including window positions), hold the mouse button down, while WS 4D starts up.

Startup

This Preference window has checkboxes that allow the different tracking and statistic windows to automatically open on startup.

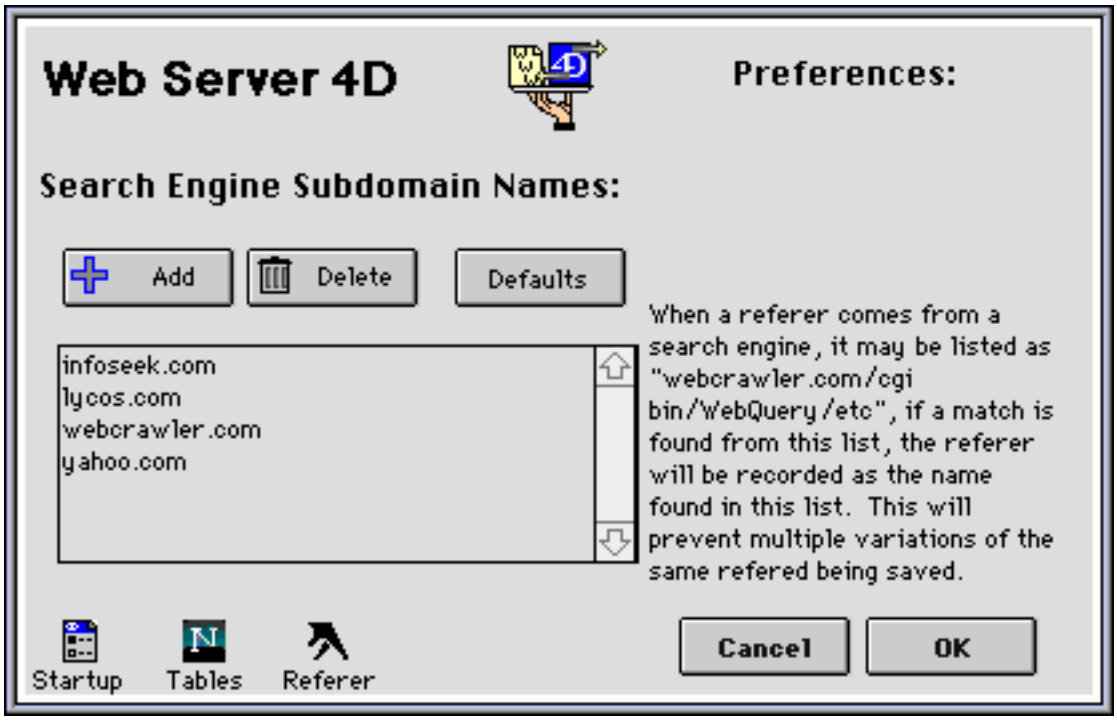
Tables

This Preference window allows the definition of which browsers support tables, it can be modified and changed as more browsers support this feature. Many of the built in features of WS 4D will use this screen to determine if information should be returned in table or regular format.



Referer

A referer is a search engine or link that was used to find your web site. Sometimes search engines will generate a different referer for each visit.


Web Server 4D
Preferences:
Search Engine Subdomain Names:
Add
Delete
Defaults
infoseek.com
lycos.com
webcrawler.com
yahoo.com
When a referer comes from a search engine, it may be listed as "webcrawler.com/cgi bin/WebQuery/etc", if a match is found from this list, the referer will be recorded as the name found in this list. This will prevent multiple variations of the same refered being saved.
Startup
Tables
Referer
Cancel
OK

Web Server 4D supports Virtual Domains and true multi-homing on both MacOS and Windows NT. Each platform has some differences and there is a section below that discusses them. Virtual Domains are supported three ways, they are:

- Host Tag Support
- IP Address to Folder
- TCP Port To Folder

Each method above has its advantages, read the sections below to decided which is best for your setup.

MacOS Virtual Domain Information

The MacOS before System 8.1, did not support the IP Address to Folder method, because the MacOS was only able to listen on one IP Address. System 8.1 changes all that. With Open Transport 1.3, the MacOS can listen on multiple IP Addresses. See the documentation that came with Open Transport 1.3 for configuration information

---

Windows NT Virtual Domain Information

Windows NT 3.5.1 and NT 4.0 support listening on multiple IP Addresses. See the documentation that came with your NT Server for setup information.

Host Tag Support

When you type in a URL at your browser such as:

```
http://www.mdg.com/index.html
```

Your browser translates the request as follows:

```
GET /INDEX.HTML / HTTP 1.0
```

If you were serving multiple index.html for multiple domains, your server would not know which index.html file to serve. Starting with NetScape 2.0, a host tag was added to the request that is sent to your server, so that your server would receive:

```
GET /INDEX.HTML / HTTP 1.0
```

```
HOST: www.mdg.com
```

If your server supports the Host Tag, it can easily figure out which index.html page to return. Web Server 4D supports the Host tag. Around 95% of all browsers available support this host tag. The biggest advantage is the ability to host multiple domains from a single IP Address.

Mapping IP To Folders

If your operation supports listening on multiple IP Addresses, you can map a single IP Address to a specific folder. This method will work for 100% of all browsers, even very old ones. The biggest disadvantage is that IP Addresses may be in short supply and some consider this method a waste of using IP Addresses and recommend using the Host Tag method.

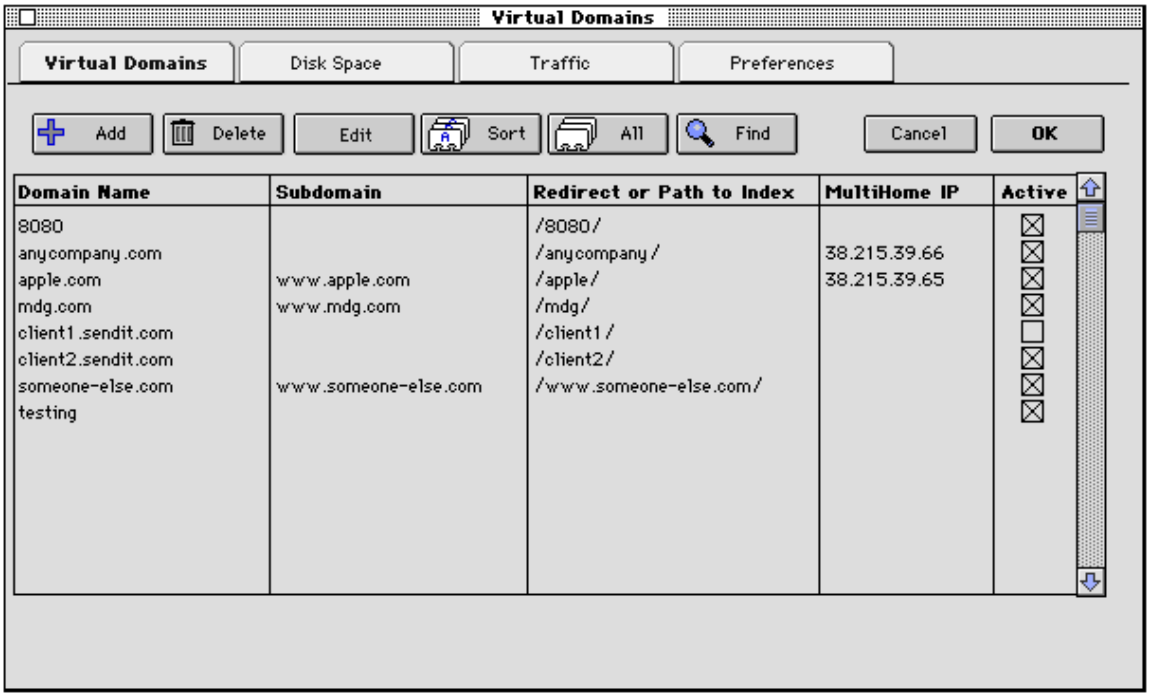
Mapping TCP Port to Folder

The default port for web access is port 80, you do not have to define this port when entering a URL, it is assumed. Web Server 4D has the ability to listen on multiple ports, not just port 80, see Web Server 4D Setting - Advanced for more information. Once your server is setup to listen on multiple TCP Ports, you can easily configure different TCP Ports to be mapped to different folders.

Note you can use this method for developing a new home page that you do not want others to see. Most firewalls can be configured to block all traffic except port 80, so that the pages under development cannot be seen by anyone outside the firewall.

Virtual Domain Main Window

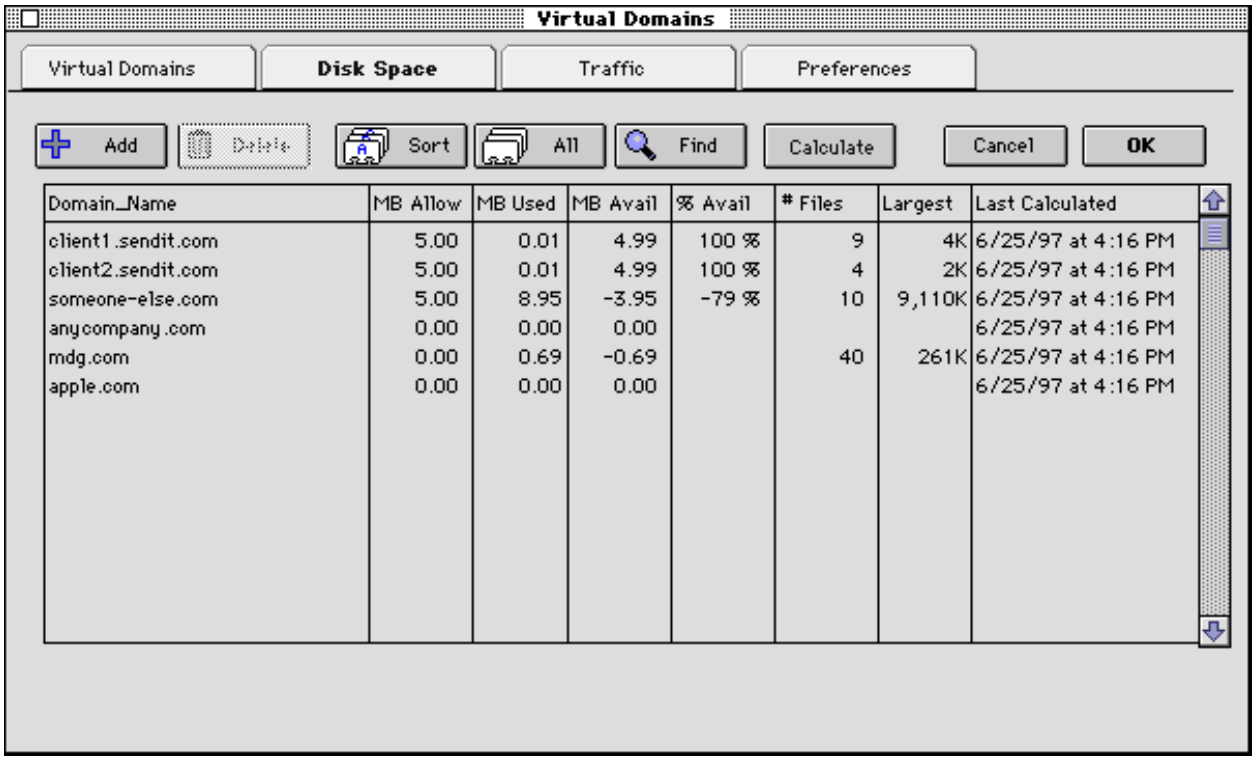
This window will be blank the first time you access it. To add a new Virtual Domain, click anywhere in the virtual domain area and click the **Add** button. Enter your domain name, Subdomain name (www), redirect or path, or IP Address for this domain and if it is active or not.



Virtual Domain Disk Space

This window contains the Domain Name, amount of disk space allowed, disk space used, percent available, number of files on the hard disk for this domain, largest file size and the date that these numbers were last calculated.

Every night at midnight these numbers will be recalculated and an accounting log file will be generated.

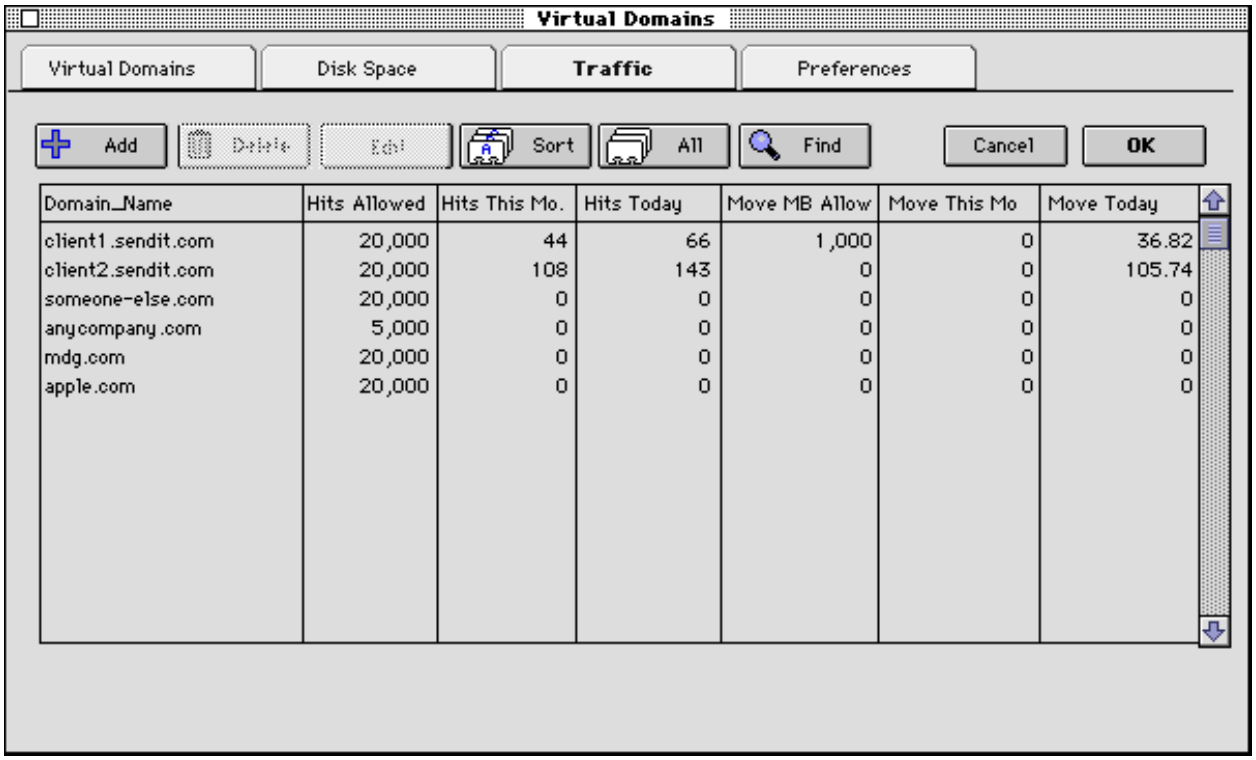


Virtual Domains Traffic Window

This window contains the amount of traffic for each of your domains. The following fields will be displayed: Domain Name, hits allowed each month, hits so far this month, hits today, amount of MB allowed to move, this month and today.

This information is updated every 60 minutes. You can retrieve the current hours statistics for all your domains by inserting a tag named <VIRTUAL_RECENT> on any of your HTML pages and either saving the document with a .WS4D suffix or adding the page to the cache. For a demo visit the URL at the MDG site:

```
http://www.mdg.com/4dws/recentusers.html
```



Virtual Domain Preference Window

This window contains the preferences for all of your Virtual Domains. The preferences for Apple Internet Mail Server are only for the MacOS version and will also work for Eudora Internet Mail Server (EIMS). This feature allows WS4D to track email for each address in the database, email forwarding and automatic email replies.

You can also specify the page to return when no Host Tag is present, this feature is only for older browsers and will display a list of all the domains at your site to choose from. By clicking on the create button, a default file will be created for you, the HTML will be:

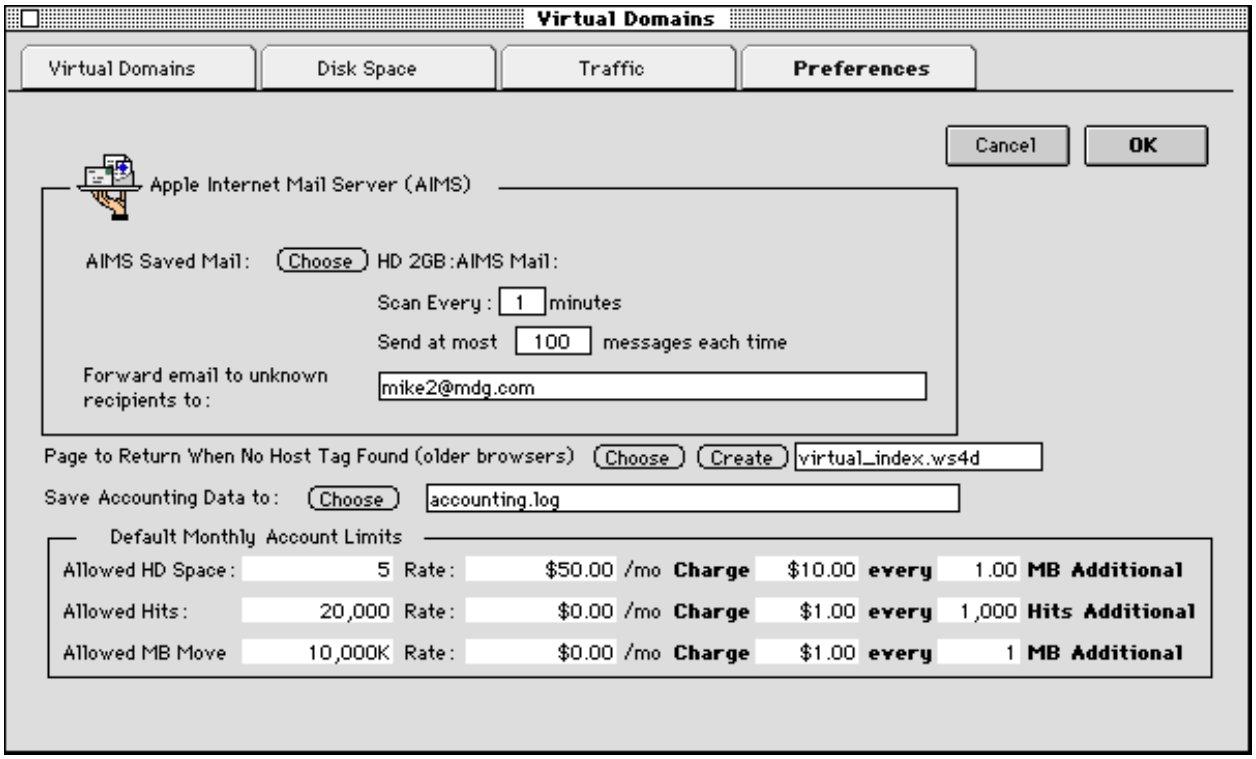
```
<HTML>
<HEAD>
   <TITLE>Old Browser</TITLE>
</HEAD>
<BODY>
<B></B>
<P><CENTER><B>
<HR>
Welcome! You are using an older browser and we are unable to
determine which host you are trying to reach, please select the
correct host from the following list:</B>
<HR>
</CENTER></P>

<P><VIRTUAL DOMAINS></P>

<P><CENTER>
```

```
<HR>
We <B>strongly</B> recommend that you upgrade to the latest version
of <A HREF="http://home.netscape.com/">NetScape</A>,
<A HREF="http://www.microsoft.com/">Microsoft Internet Explorer</A>,
<A HREF="http://www.aol.com">America Online</A>.</CENTER></P>
</BODY>
</HTML>
```

The tag named <VIRTUAL DOMAINS> will automatically be replaced with all active domains that have a name and description entered.

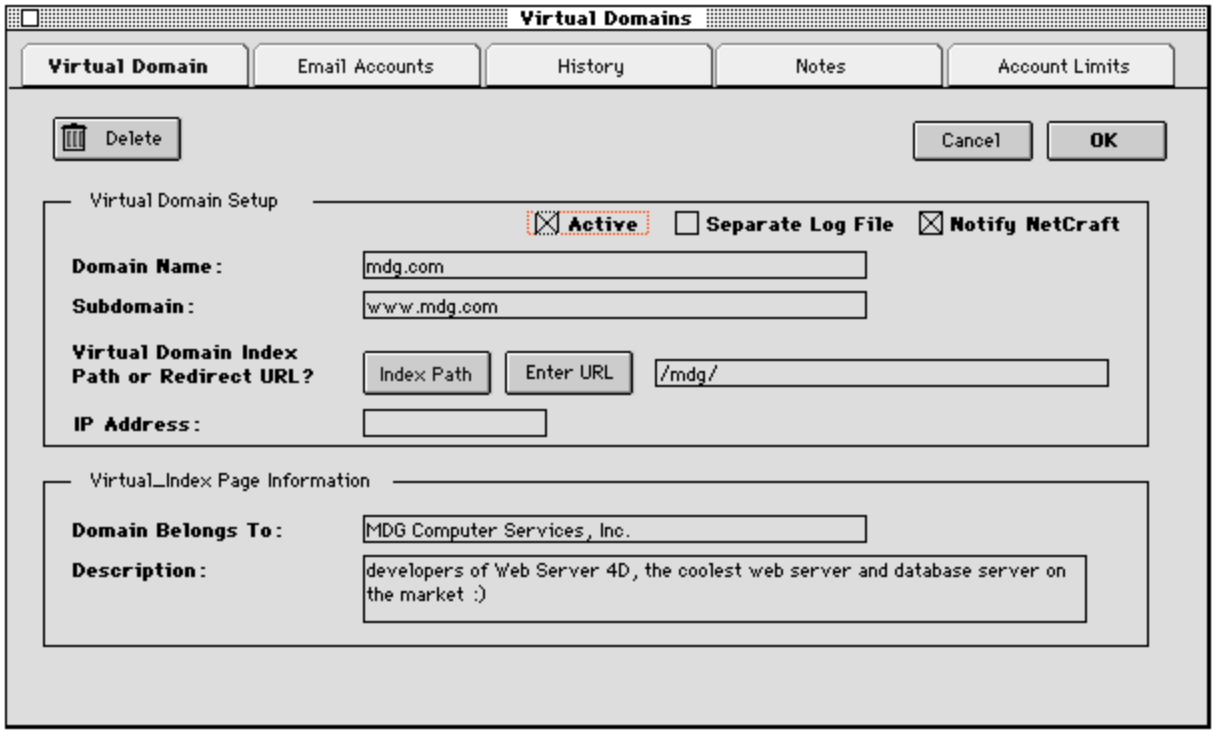
For an example of how the above HTML will look after the <VIRTUAL DOMAINS> tag is replaced, visit the following URL:

```
http://julia.mdg.com/
```



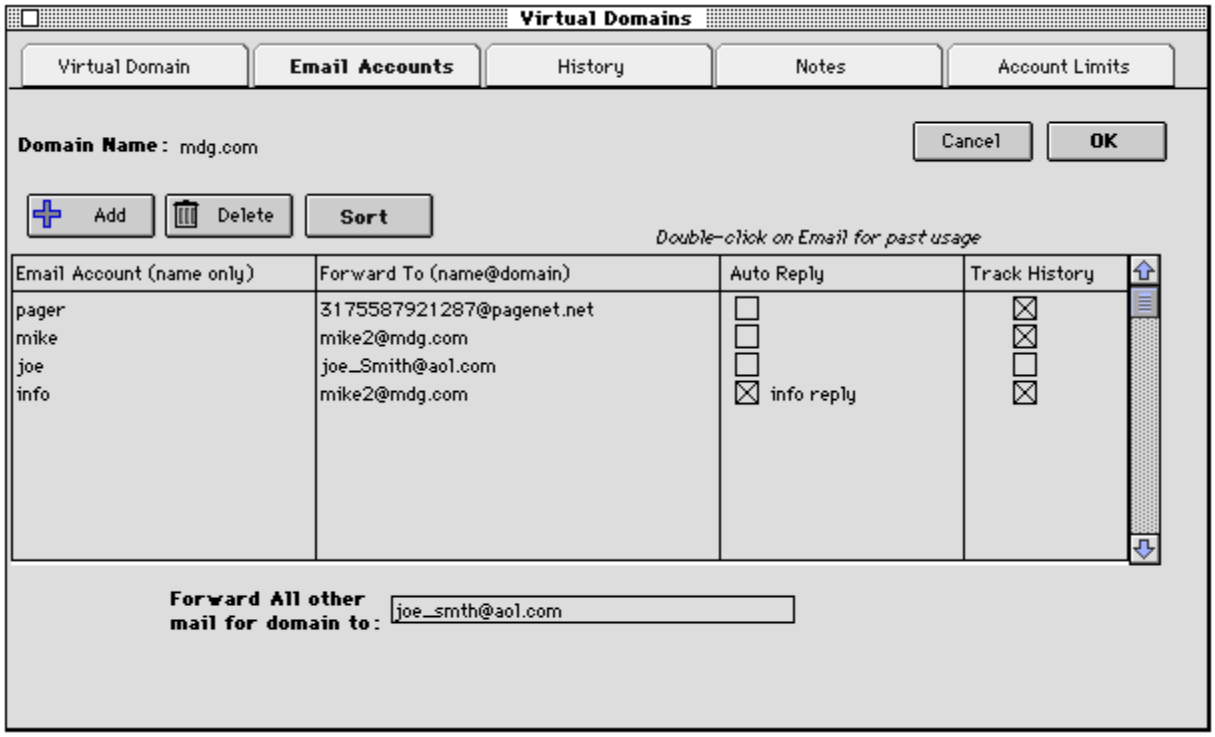
Virtual Domain Edit Window

This window is available by double clicking on a domain (or clicking the Edit Button) when you are viewing the list of domains. This window allows you to configure each domain. Some of the same fields are displayed here that are also displayed on the list of domains window. The new fields are: Domain Belongs to and Description. These fields are used whenever you use the <VIRTUAL DOMAINS> WS4D tag. The tag is automatically replaced with all the active domains with these fields filled in. This feature is used for older browsers that do not send a Host Tag. A page will be displayed, asking them to select the Host / Domain that they are looking for.



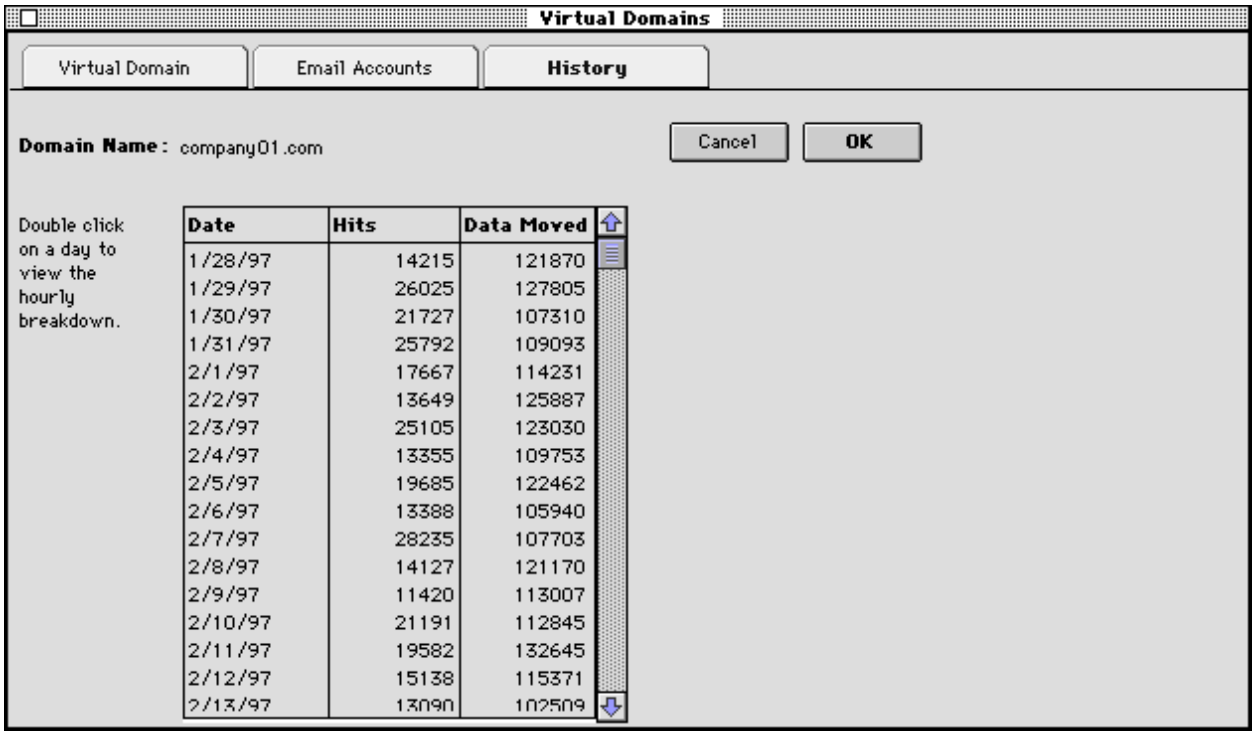
Virtual Domains Email Accounts Window

This is a MacOS only feature and requires the Apple Internet MailServer (AIMS) or Eudora Internet Mail Server (EIMS) for automatic forward / redirecting of Email (supports multiple addresses: sales@company01.com, sales@company02.com, etc.). Also support Auto Replies, to have a message automatically sent. Optionally, each request for an autoreply can also be forwarded to a specific user.

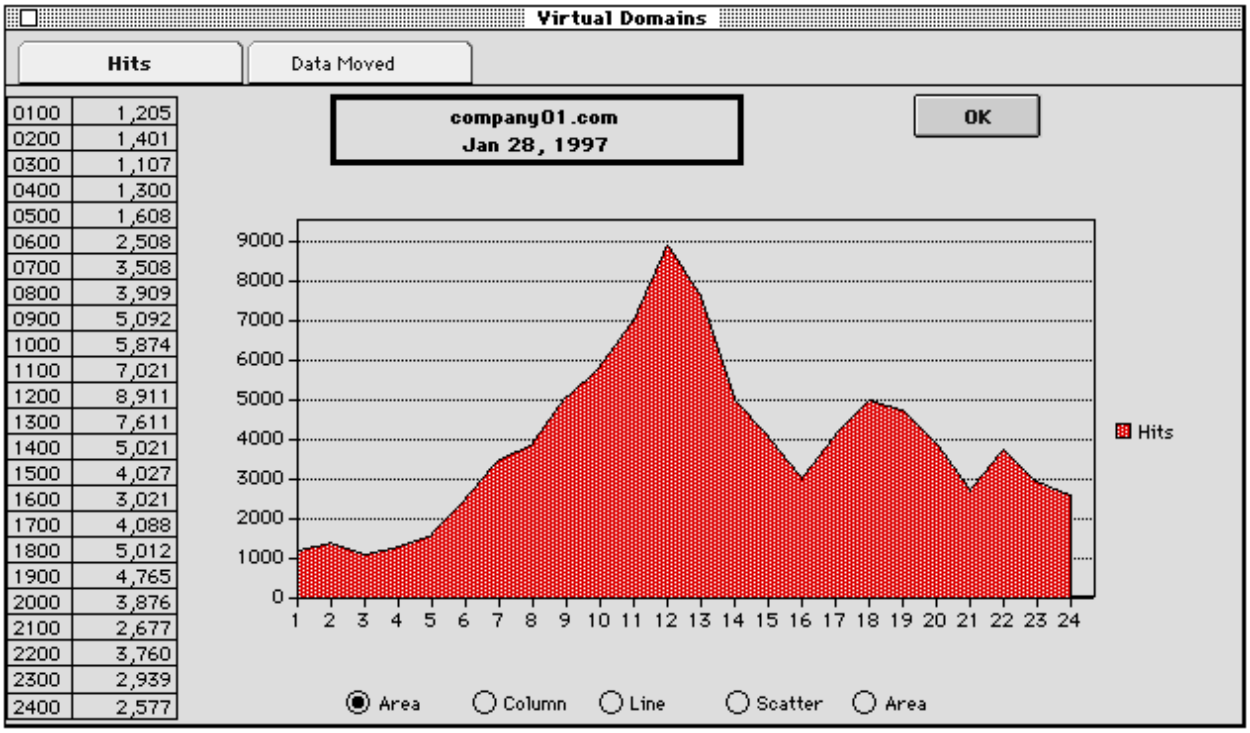


Virtual Domains Email Accounts Window

By double clicking on any of the email accounts, a history window will automatically be displayed. If the Track History button is checked, all email for each account for each domain will be tracked here.

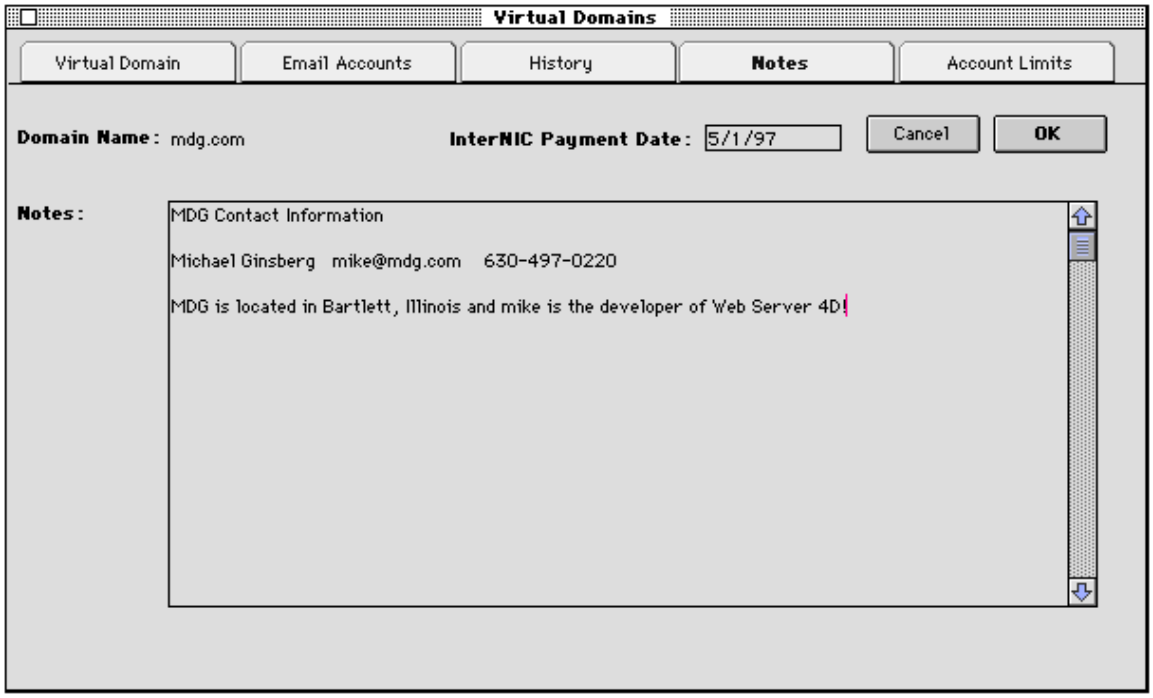


Double click on any day to see the breakdown for each hour.



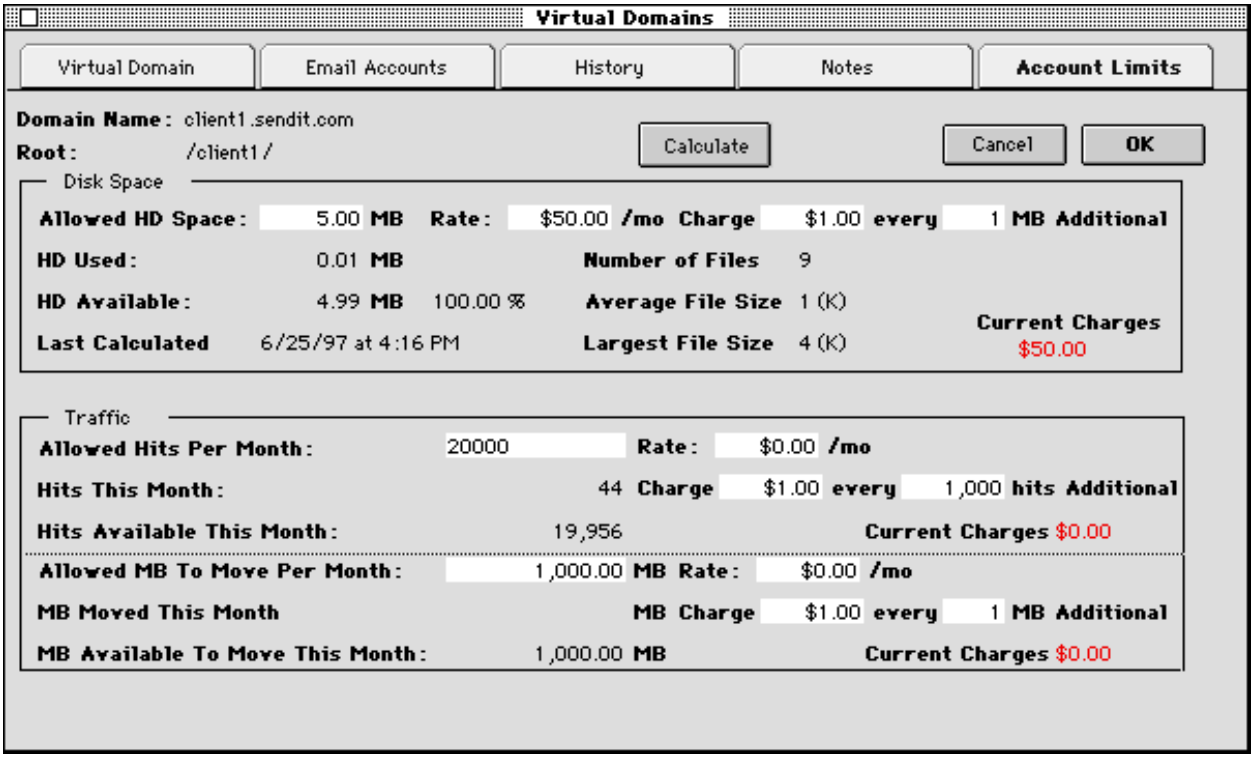
Virtual Domain Notes Window

This window can be used to enter any type of text notes for each domain.



Virtual Domains Account Limits Window

This window allows you to setup the account limits for each domain. A nightly accounting log file is generated based on these limits for each domain. You can use this accounting log file for easy billing and tracking.



Note For domains that you do not want calculations turned on, just enter a Zero in the MB Allowed field.

Virtual Domain Email

The Web Server 4D virtual hosting works with the Apple Internet Mail Server (AIMS) or Eudora Internet Mail Server (EIMS) to sort incoming mail by domain name and to forward that mail to the appropriate accounts for each domain. Web Server 4D enables e-mail addresses within different domains to have the same name, allowing your server to have, for instance, one "Webmaster" address and one "Info" address for each domain.

Dividing up your AIMS/EIMS accounts

Before configuring Web Server 4D, you need to divide your current AIMS/EIMS accounts into two categories. The first category, which we will call Web Server 4D accounts, is those accounts which you want Web Server 4D to act as a clerk for. Accounts in this category will generally be functional names like "Webmaster" and "Info" which you want to be

forwarded differently for different domains. Other possible accounts in this category include common account names like "John" that might occur in multiple domains.

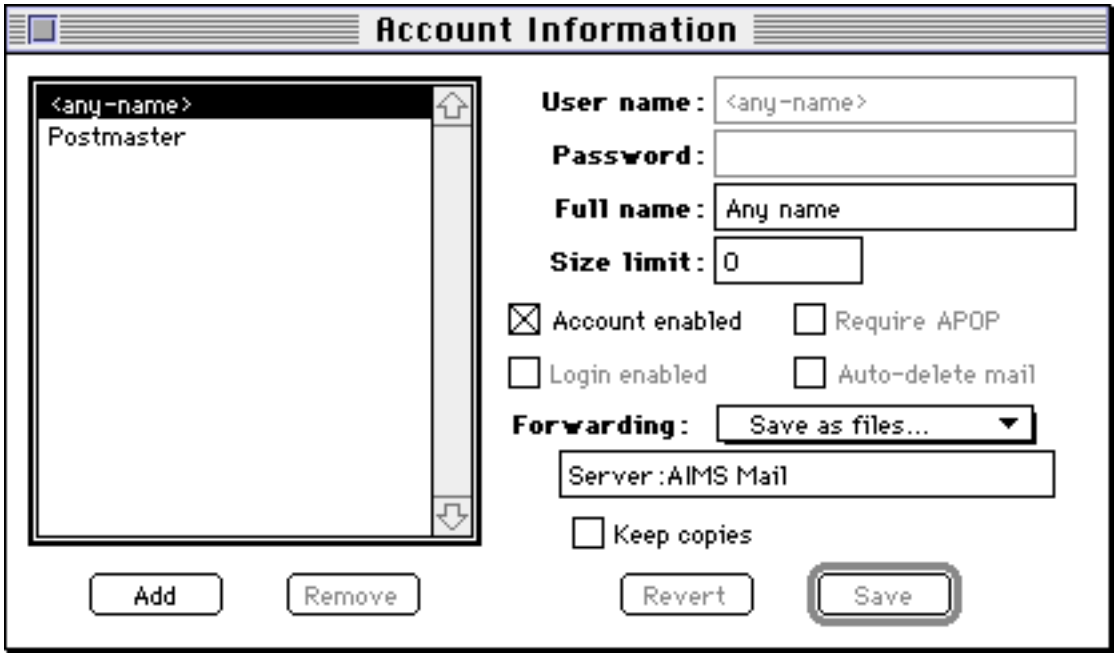
- **IMPORTANT**: Web Server 4D only forwards mail; it does not act as a repository for mail. Thus do not assign accounts to Web Server 4D that you want end users to be able to "log in" to.

The second category of AIMS/EIMS accounts is those accounts which are not to be handled by Web Server 4D (non-Web Server 4D accounts). Such accounts include accounts which users will need to log in to directly, "mailing list" accounts, and accounts forwarded elsewhere directly by AIMS/EIMS. Non-Web Server 4D accounts should be accounts which are only to be used under one domain name.

Configuring AIMS/EIMS for Web Server 4D accounts

Once you have determined which accounts you wish Web Server 4D to handle, you must configure AIMS/EIMS to pass Web Server 4D all e-mail sent to those accounts. AIMS/EIMS passes e-mail to Web Server 4D by placing that mail in a special folder which Web Server 4D checks periodically. This folder, the Web Server 4D input folder, must be on the startup volume of your Macintosh. It can be named anything you would like.

For each Web Server 4D account, you must configure AIMS/EIMS to save mail for that account to the Web Server 4D input folder. You do so by configuring these accounts using the AIMS/EIMS "Save as files..." forwarding option for each account, as shown below, and specifying the Web Server 4D input folder as the place to save the files.

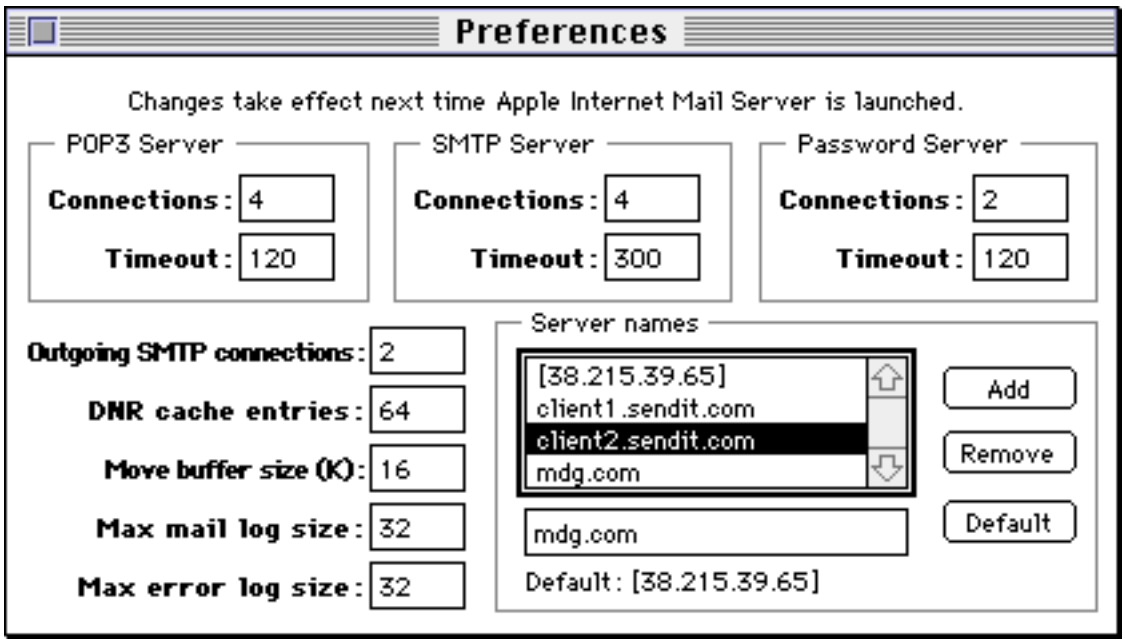


As shown above, generally you will wish to disable login for each Web Server 4D account, since mail to such accounts is forwarded and not read directly using the account name. Since login to the account is disabled, you do not need to specify other parameters like password. If a user was previously reading e-mail using a Web Server 4D account, you will need to give that user a new account name at which to read e-mail, and then use Web Server 4D to forward e-mail as appropriate to that new account name.

- IMPORTANT: AIMS/EIMS is very particular about the syntax of the folder to use for the "Save as files..." option. You must specify a complete path name, starting with the hard disk name (in our example, "Macintosh HD:Web Server 4D:MailFiles"). Folders in the path are separated by colons, and there must not be a colon after the last folder name. Alternately, if you specify no pathname at all, AIMS/EIMS will save the files to the same folder in which it resides, and then you can specify that folder as the Web Server 4D input folder.

Configuring AIMS/EIMS for multiple domains

If you have not already done so, you must configure AIMS/EIMS to accept mail for multiple domains. You must tell AIMS/EIMS the name of each domain for which it should accept mail through the "Preferences" item of the Server menu. Simply enter each domain name into the "Server names" box as shown and hit the "Add" button. You must quit and restart AIMS/EIMS after entering new domain names.



Configuring your DNS for multiple domains

For mail to a particular domain to be passed over the Internet to AIMS/EIMS and then on to Web Server 4D, your domain name server
(DNS) must be set up correctly for that domain. Specifically there must be an MX record for the domain, listing the AIMS/EIMS
machine as the mail server for that domain. If you are using QuickDNS Pro, additional setup documentation is available.

Running and configuring Web Server 4D Virtual Domains

Once you have configured AIMS/EIMS and your DNS for multiple domains, double-click the Web Server 4D application to start it up. Pull down on the File Menu and select "Virtual Domains...". Next, goto the Preferences Page and "Choose" the Saved Mail Folder that you entered in AIMS/EIMS. Fill in other settings here.

Initially, Web Server 4D displays a blank list of the domains that it will be handling mail for. Use the "Add" button to enter a new domain name. Each domain can be associated with a specific root folder (a folder within the Web Server 4D folder) or can be a URL that is automatically redirected to another web site.

Go through each domain name for which you want Web Server 4D to process mail, and enter forwarding information for all accounts which you want forwarded within that domain. When you are finished, your domain name list should generally match the list entered into the "Server names" box in the AIMS/EIMS Preferences dialog.

- ƒIMPORTANT: Be sure to include your own domain name in the list, otherwise you will not receive e-mail sent to accounts within your own domain.

The forwarding list for each domain should include a subset of all the Web Server 4D accounts you configured into AIMS/EIMS previously.

Web Server 4D in operation

You can change Web Server 4D's configuration at any time, simply by entering new information as indicated in the Reference section. Changes to Web Server 4D's configuration take effect immediately. Quitting Web Server 4D terminates all forwarding operations until Web Server 4D is run again.

Web Server 4D Cache

This section will step you through setting up your Web Pages. It covers these important setup concepts:

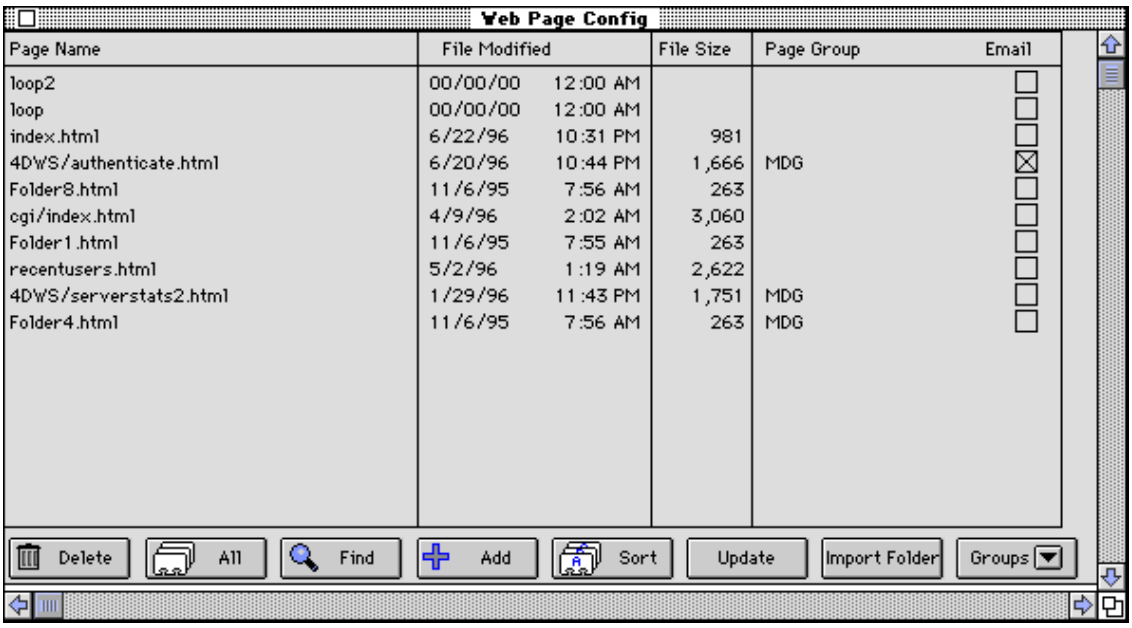
- Define what document should be returned for a URL
- Define who should be sent an Email message every day stating the activity for the day for the page
- Define different pages returned depending on Browser
- Define different pages returned depending on Domain or IP
- Define different pages returned depending on Referer
- View History for this page, which contains: date, new hits, repeat hits, referer (what search engine or link user found your page)
- Define a sound to play at the server when a page is served

Note	Setting up Web Pages is *NOT* required to use your Web Server 4D. If you are using WebStar or some other Web Server, quit out of it, put WS 4D in the same folder and launch. WS 4D will take over serving your existing pages, however, if you select the page in Web Page Setup, the page will be served faster, since the document will be loaded into memory.

Listing of Pages

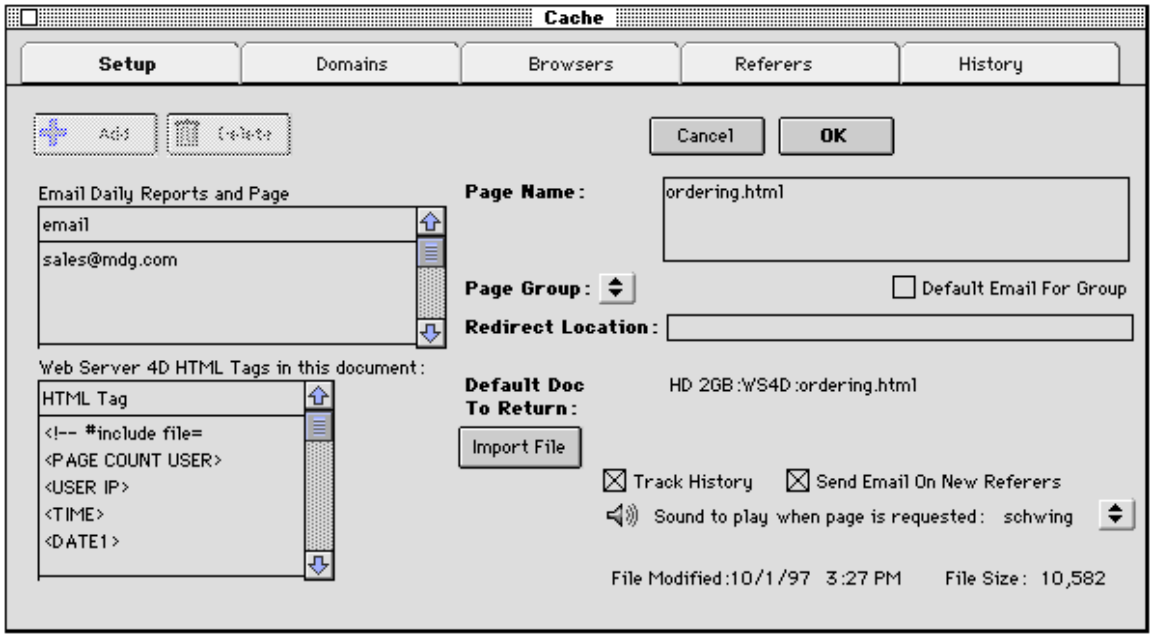
.

A listing of all the pages that have been defined are displayed when you select **Cache**. Double-clicking on an existing page allows modification of that page. Clicking on the Add button allows creation of a new Web Page (the Web Page will already need to be created on your hard disk - most likely in the same folder as WS 4D).



Delete	The Delete Button allows you to delete a page that you highlight.
All	The All Button will show you all pages that have been setup. If you do a Search and the selection only returns one page, clicking All will display all pages.
Find	The Find Button allows searching of all pages that have already been setup
Add	The Add Button allows adding of new pages.
Sort	The Sort Button allows sorting by any field.
Update	The Update Button allows updating of buffered pages.
Import Folder	The Import Button allows you to import a folder of HTML files in one step.
Groups	The Group Button allows so you to change the Email Group for the selected records,

Cache Item



Email Page Stats Every Day To

Enter Email addresses of the “owners” of this page and they will automatically receive a daily Email stating the activity for the page. Included in the Email will be new versus repeat hits for this page. The Add and Delete buttons allow modification to the Email user list.

Page Name

This is the name of the Page as listed in the URL. If the URL to a page is http://www.xxx.com/home.html, the page name is home.html.

Web Server 4D HTML Tags

Any Web Server 4D HTML tags that are used in the document will be listed here.

Page Group

The Page Group allows you to group pages by client or by project. All pages belonging to the same group will be included in the same daily Email message that reports the stats.

Default Email For Group

When this checkbox is checked, the Email addresses listed on this page will be the default for the entire group.

Import Button

Click this button to select the default document to return for this page.

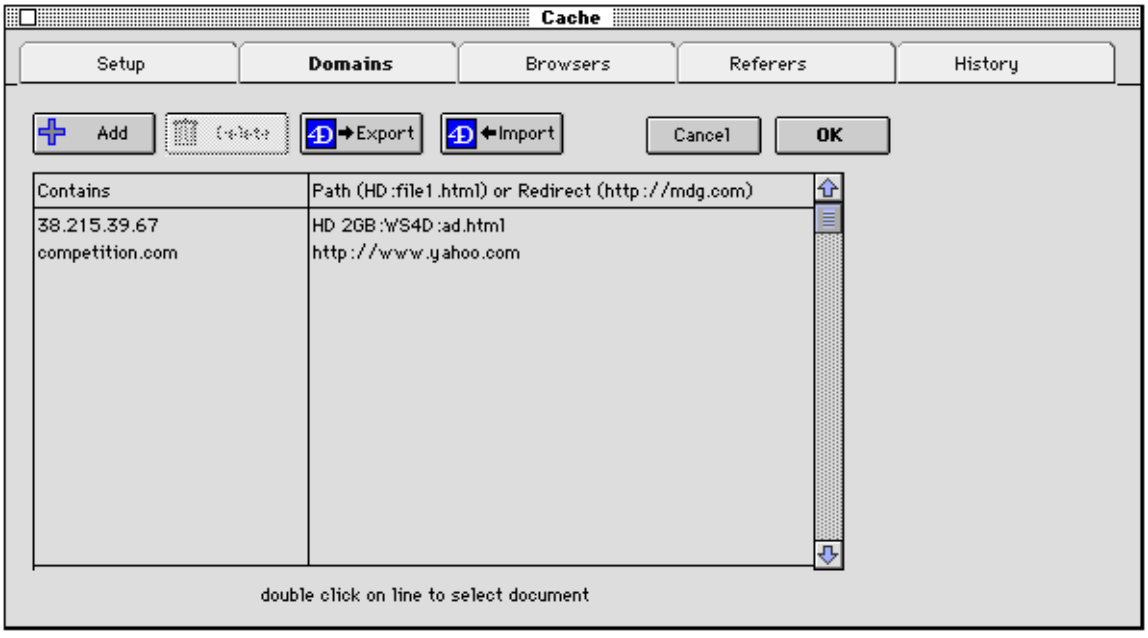
Redirection Location

This is the full URL that the browser should be redirected. This can exist on this server or anywhere else on the Internet.

Send Email on New Referers

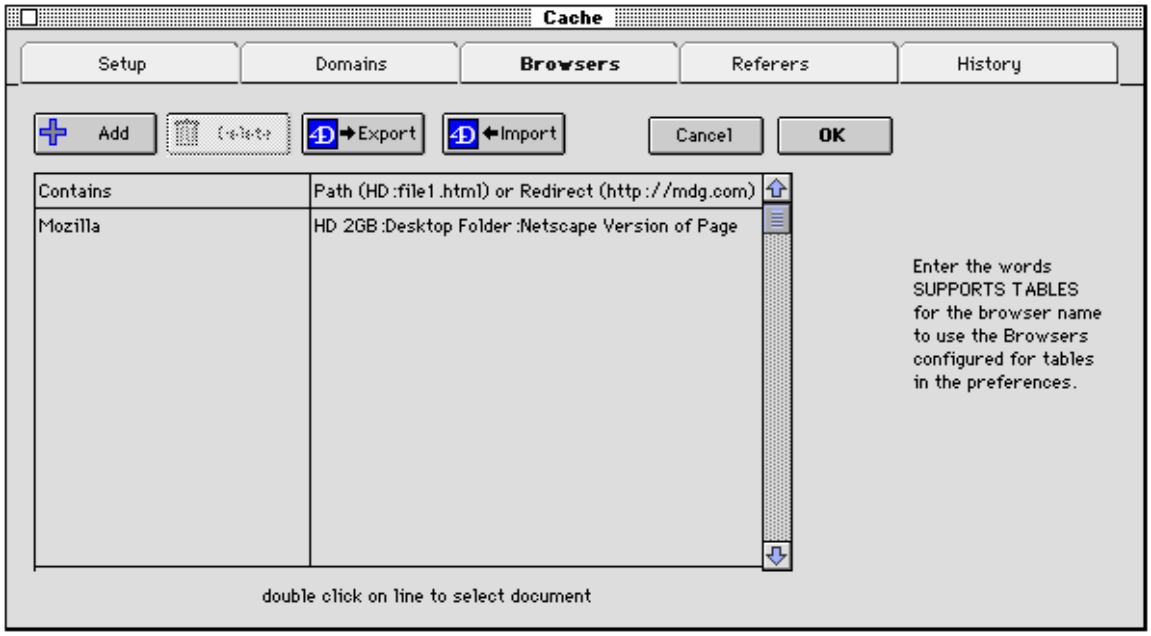
An Email message will automatically be sent to the listed email address whenever a new Referer is used to link to the listed page. Some search engines will generate a unique Referer based on the search. You can use Web Server 4D Preferences to automatically strip out only the search engine name.

Domain Exceptions



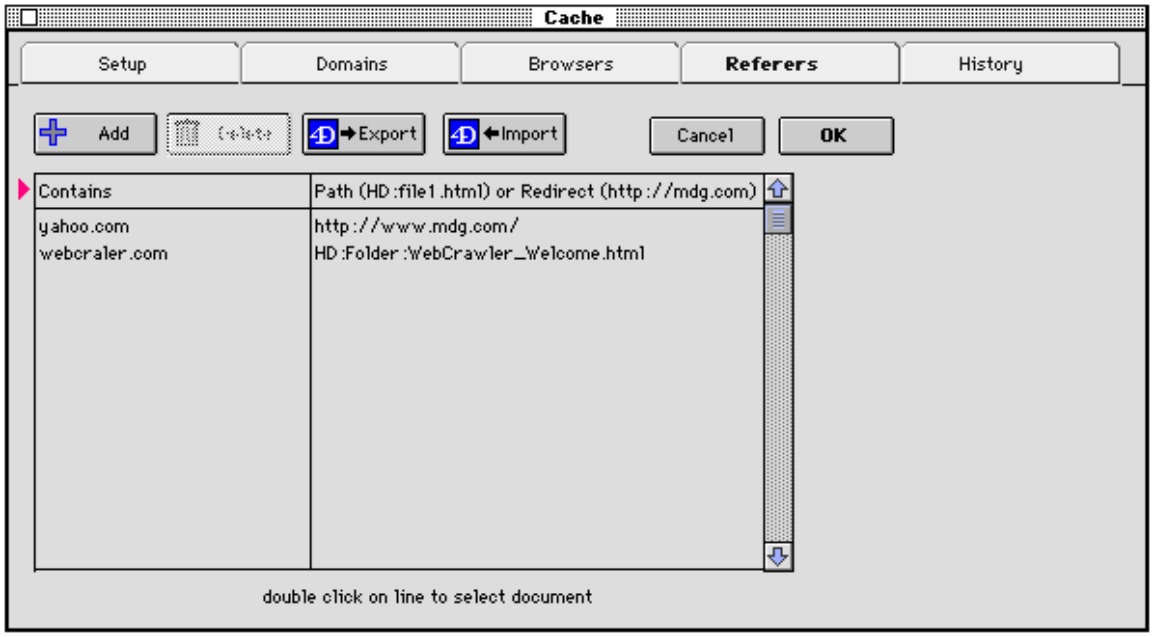
Domain Exceptions allow you to serve a different file based on a Domain Name or IP Address. A file on your hard disk can be selected to be returned OR you can enter a http location for redirection.

Browser Exceptions



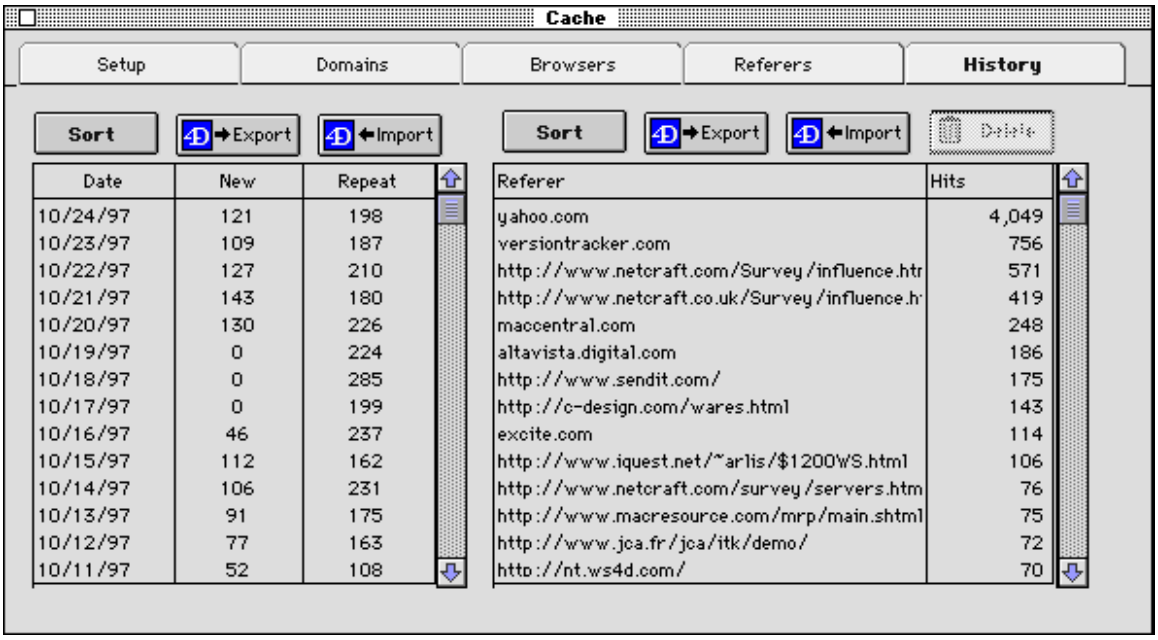
Browser Exceptions allow you to serve a different file based on a Browser being used. A file on your hard disk can be selected to be returned OR you can enter a http location for redirection.

Referer Exceptions



Referer Exceptions allow you to serve different pages for different Referers. You can now serve a different page when someone accessed your site from Yahoo or WebCrawler. You can also use this feature when a Search Engine is pointing to a specific page that you do not want people to see first, you can redirect them to your main page.

History



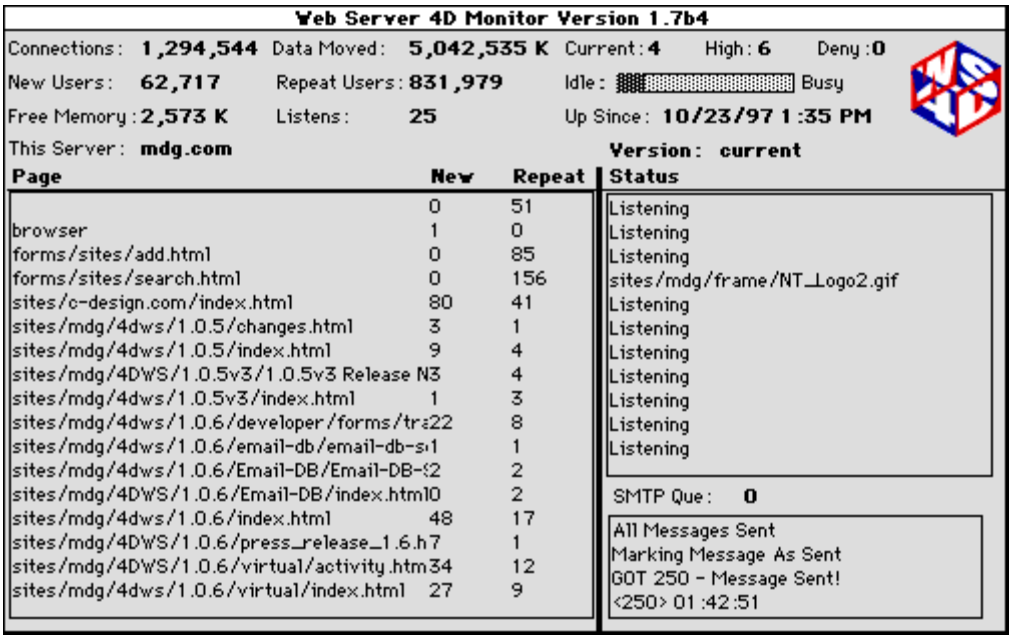
The History page will display the number of repeat and new users for this page for each date and the referrers for this page.

Monitoring Web Server 4D

There are four monitoring windows available while Web Server 4D is up and running, they are:

- Server Monitor
- Recent Users
- Browser Statistics
- Domain Statistics

Server Monitor



Connections

This is the number of connections or hits for Web Server 4D. Each page and each graphic image counts as one hit.

Data Moved

This is the amount of data that has been moved over by Web Server 4D.

Current

This is the number of current incoming connections.

High

This is the highest number of simultaneous connections your server has had.

Deny

The number of users that have been denied connections today.

New Users

This is the number of new users that have visited your server. A new user is based on IP Address. If a user is visiting you from behind a firewall or America Online, this number will be lower then actual new users.

Repeat Users

This is the number of repeat users that have visited your server. If one user requests 20 files, 1 will be added to the new user count and 19 will be added to the repeat users count.

Busy Thermometer

This will give you a graphic representation of how busy your server is.

Free Memory

This is the amount of free memory that you server has available, after opening all listens and tracking windows. If this number is running below 200K, it is recommended that you increase the amount of memory.

Listens

This the total number of listens that your Web Server 4D is configured for. This will include a total for all ports that are being monitored.

Up Since

This is the date and time that Web Server 4D was last launched.

Page

This is the page name that is being tracked.

New

This is the number of new visitors for this particular page.

Repeat

This is the number of repeat visitors for this particular page.

Status

This is a status of all your current listens and the state of each listen.

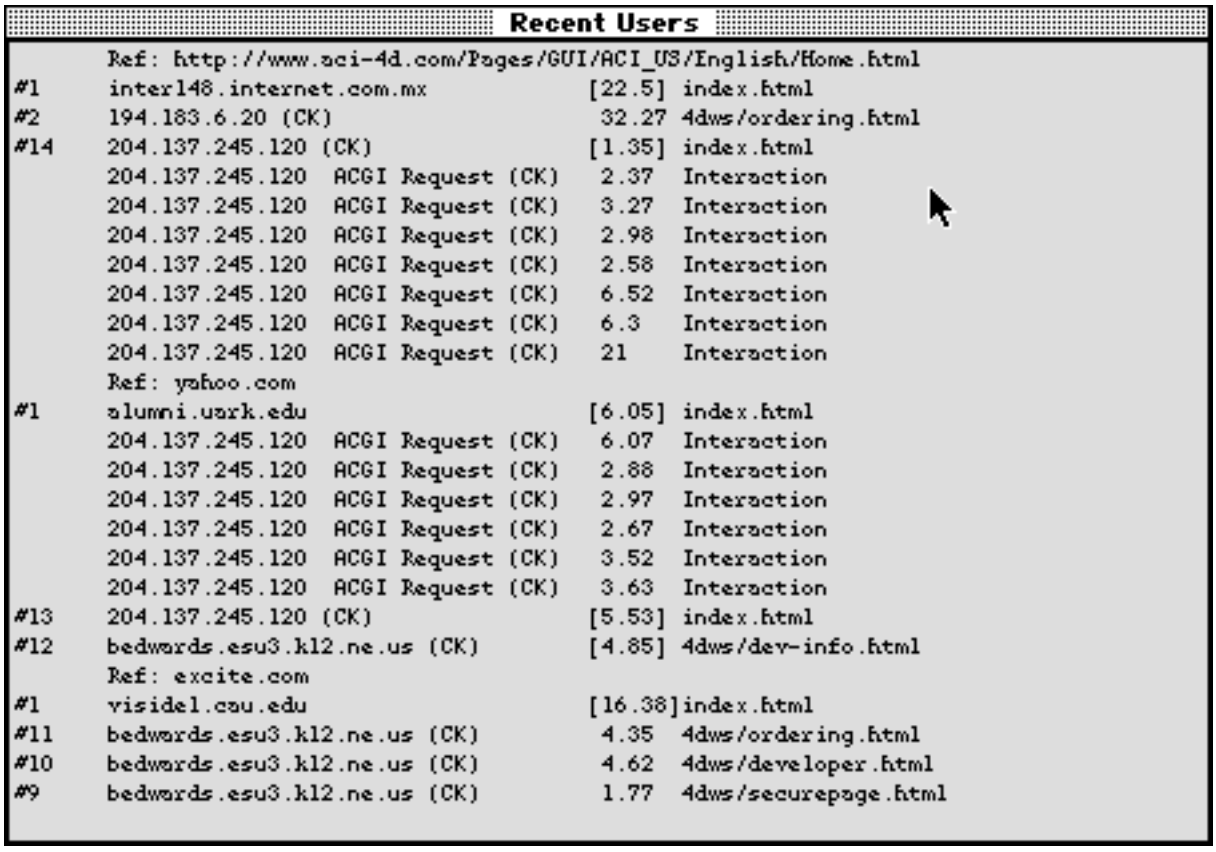
SMTP Que

This is the number of Email messages waiting to be sent and the status as a message is being sent.

This Server

This is the name of the server, it is filled in automatically by WS4D. Depending on how your DNS is setup, either a domain name OR IP Address will be shown here.

Recent Users



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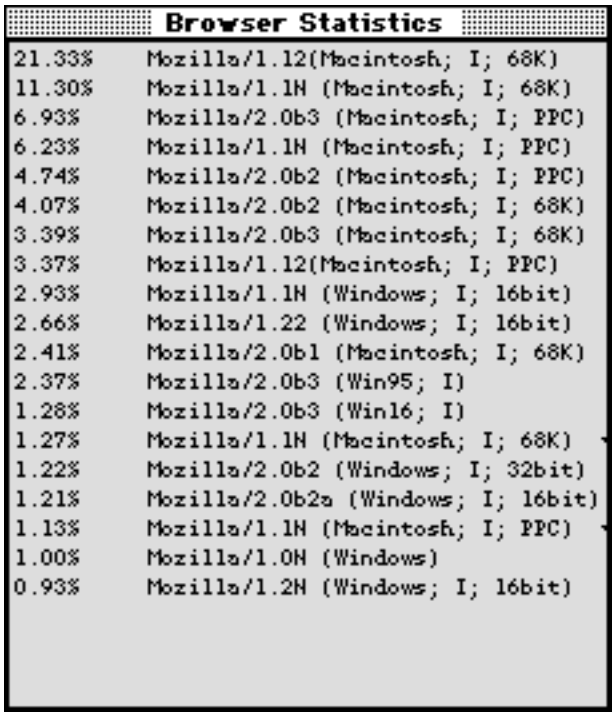
The Recent Users Window shows the recent users that have visited the server. The first column is the number of times you have visited our server. The second number is your DNS Name or IP Address. The third column is the number of seconds it took to send the file. The last column is the file that was sent. If there is a Referer, a line will be listed above showing you how this user found the server (which search engine or link was used to find your site).

If the Seconds to Send appear in brackets - it indicates that the client already had a current copy of the file cached locally and Web Server did not need to resend the requested file - this speeds up serving of files even when reloading pages!

If a (CK) appears next to the IP Address or DNS Name, this indicates that this user has already visited our server and Netscape Cookies are being used to track this user counts.

If a [xx] appears next to the IP Address or DNS Name, this indicates the country preference that the browser is set.

Browser Statistics

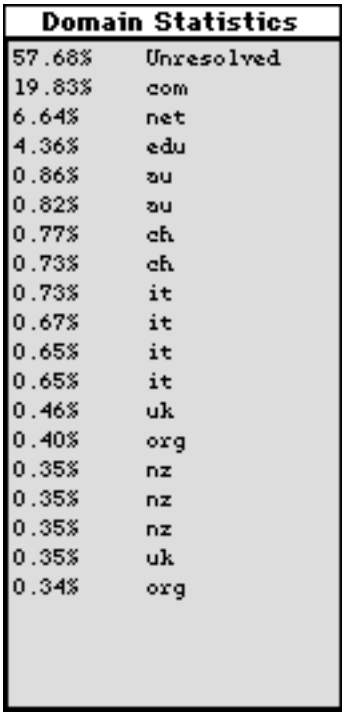


.

The Browser Statistics Window tracks in real time the type of browsers that are visiting the Web Server. The breakdown will be by percentage, with the most popular browser at the top of the list.

Note	Mozilla is the code name for Netscape. Netscape used this name, since they believed that Netscape would destroy Mosiac like Godzilla destroyed Tokyo.

Domain Statistics



The Domain Statistics Window shows the recent users by Domain Name sorted by percentage. You will see a DNS entry named Unresolved for those users whose site does not return a DNS name.

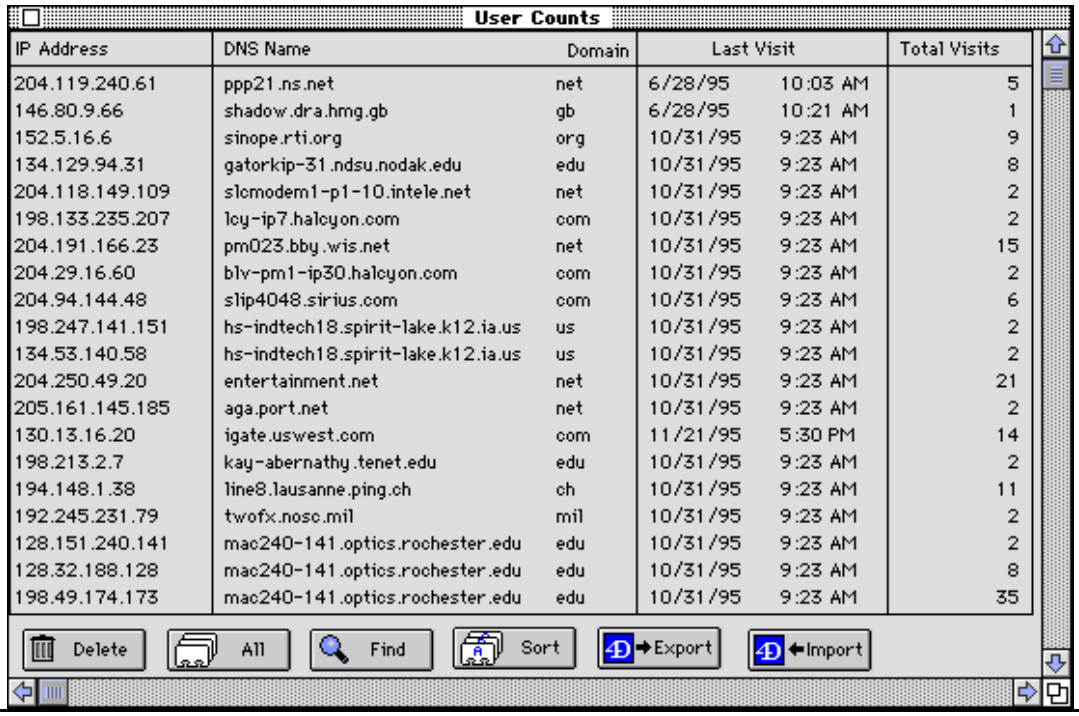
Tracking Windows

There are five tracking windows available while Web Server 4D is up and running, they are:

- User History
- Page History
- Referer Counts
- User-Page History

User History

This Tracking Window will show you ALL users that have visited your server.



IP Address

This is the IP Address for a user.

DNS Name

This is then name that was returned by the users router when Web Server 4D performed reverse DNS lookup.

Domain

This is the domain that a user belongs to, if DNS lookup was not successful, then Unresolved will be displayed.

Last Visit

This is the date and time that this user last visited our server.

Total Visits

This is the total number of times that a user has visited our site.

	The Delete Button allows you to delete a user that you highlight.
	The All Button will show you all users that have visited your server. If you do a Search and the selection only returns one user, clicking All will display all users.
	The Find Button allows searching of all users that have visited your server.
	The Sort Button allows sorting by any field.
	The Export Button allows exporting of any of the fields.
	The Import Button allows exporting of any of the fields.

Page History

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This Tracking Window will display a history of all your pages and the new versus repeat visitors that they have received.

Web Page Name

The name of the Web Page being tracked.

Date

The date of the statistics for this Web Page.

New Hits

The number of new visitors to this page on this date.

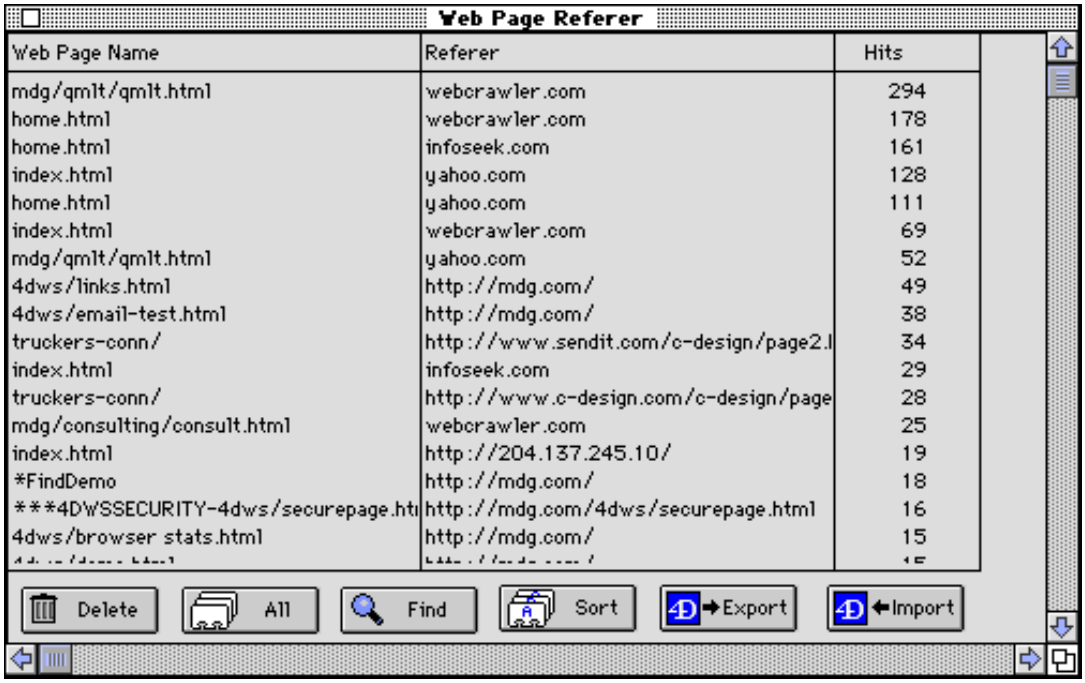
Repeat Hits

The number of repeat visitors to this page on this date.

Delete	The Delete Button allows you to delete a line that you highlight.
All	The All Button will show you all dates for all pages that are being tracked. If you do a Search and the selection only returns one date, clicking All will display all.
Find	The Find Button allows searching by page name, date, new, or repeat.
Sort	The Sort Button allows sorting by any field.
Export	The Export Button allows exporting of any of the fields
Import	The Import Button allows exporting of any of the fields

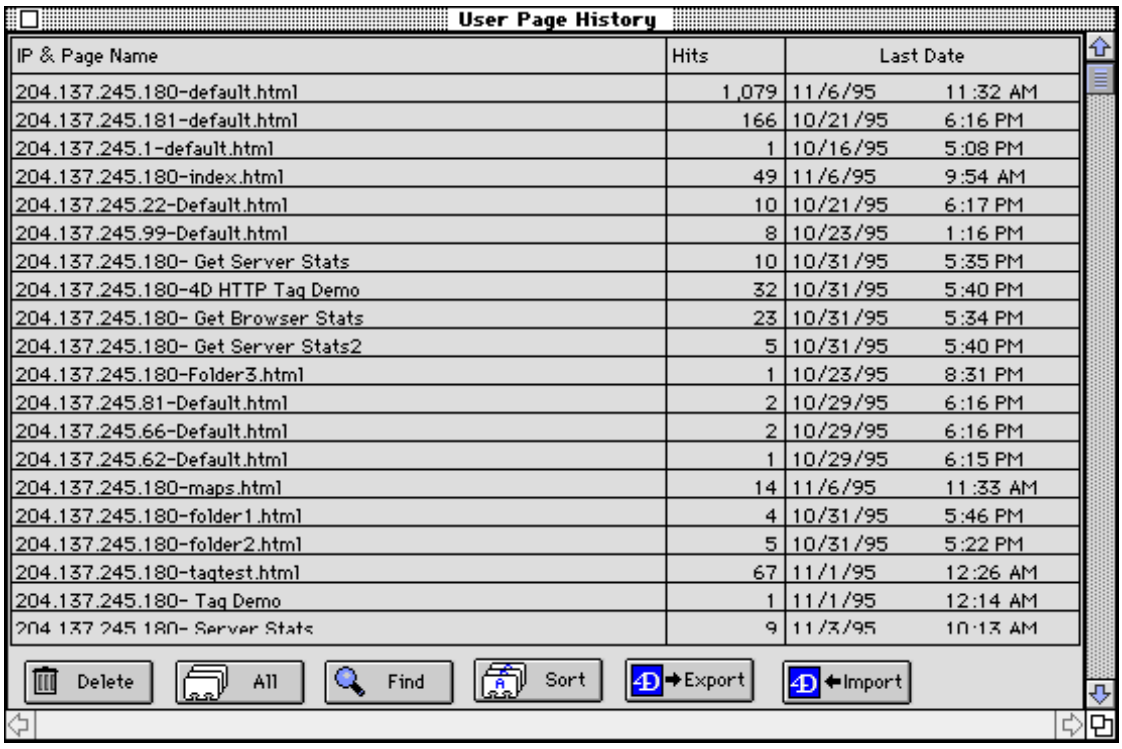
Referer Counts

This Tracking Window will display a history of all referrers. A Referer is the location on the Internet that was used to find your page. This location will either be a search engine like WebCrawler or a link to your Web Page from another Web Page.



User-Page History

This Tracking Window will display a history of all the pages that every IP Address has visited. The number of hits and the last date that the page was visited will be displayed.



IP & Web Page Name

The IP Address and Web Page Name, in format of 0.0.0.0-web page name.

Hits

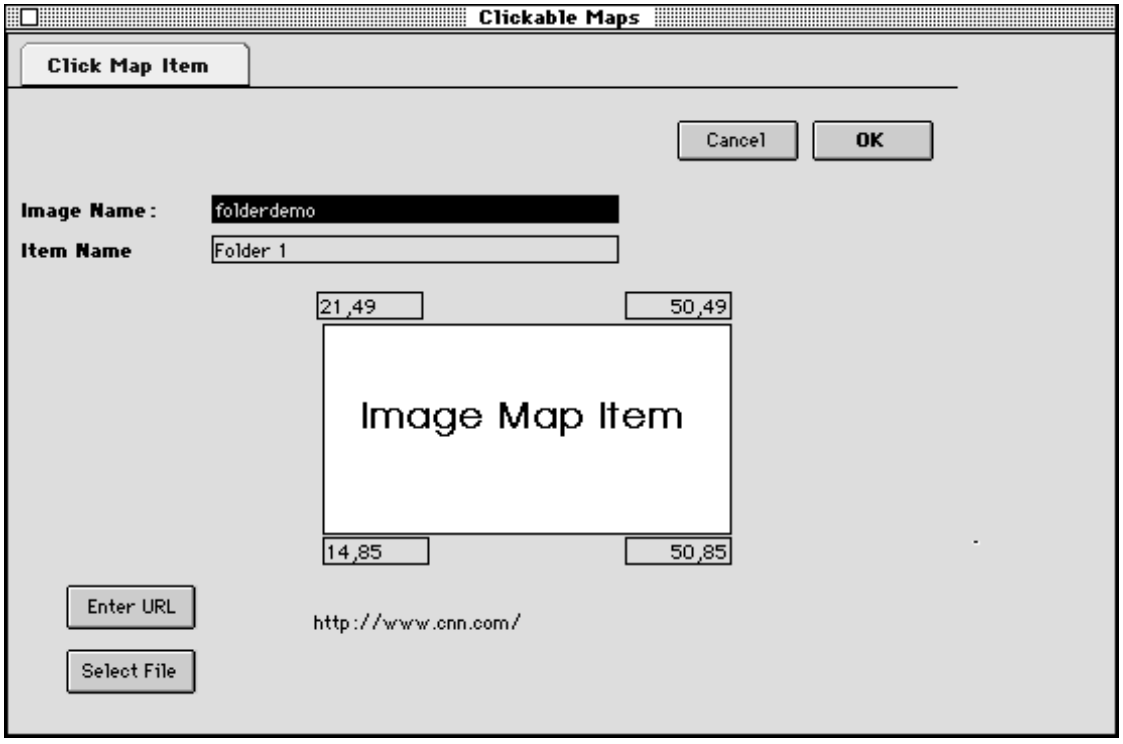
The number of times the page was found by the Referer.

Last Date

The last date and time that this page was visited by the listed IP Address.

Clickable Maps (without CGI)

Basic clickable maps are support without using CGI (Common Gateway Interface). This speeds up the returning of files while using a clickable map. Clickable Maps in Web Server 4D only support rectangles, this means that the regions you define as a hot area, must be a rectangle. The Click Map Item can redirect to another URL or a file can be returned.




```
<P><CENTER><A HREF="http://www.mdg.com/clickmap$FolderDemo"><IMG SRC="map.gif"
ismap></A><BR>
```

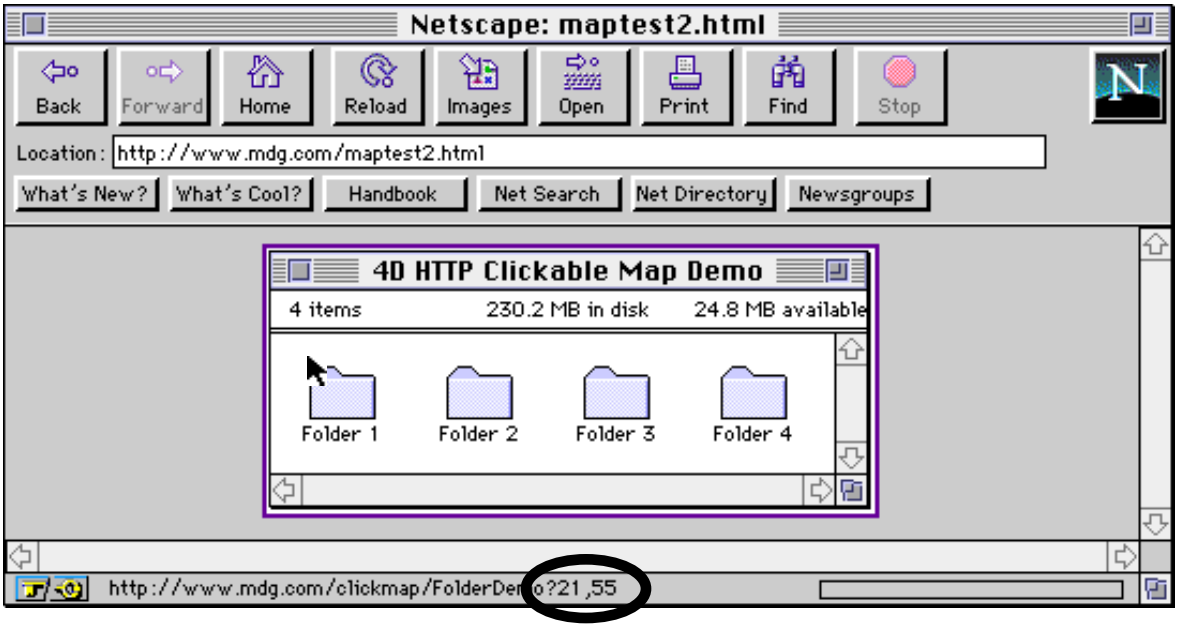
Steps for Creating Clickable Maps.

1. Create a HTML document that has the graphic image along with the ISMAP tag, here is an example:

```
<P><CENTER><A HREF="http://www.server.com/clickmap$FolderDemo">
<IMGSRC="map.gif" ismap></A><BR>
```

2. Open up your Web Browser and type in the URL that points to your image map file.

3. Place the mouse directly over the top left of the first item. Note the numbers that are displayed in the bottom of your browser window. These numbers are the coordinates within the image map and are the same numbers that get entered into the WS 4D Clickable Map area.



4. Obtain the coordinates for the top right, bottom left, and bottom right. After you have all the coordinates for the first item, you can enter them in.

5. Repeat Steps 3 and 4 for all the items on your clickable map. For example, in the above sample, we would have one record created for each of the four folders.

Note Use ISMAP tag to figure out the coordinates of your different images in your graphic. Make sure that you have the /clickmap/ text in your URL (after your server name, before your image name). Create one record in the database for each clickable map item.

Image Name

This is the name that you want to refer to the whole graphic image. This name would be the same for ALL the items on the same clickable maps.

Item Name

This is the name that you want to refer to the single item on the clickable map.

Guest Books (without CGI)

Web Server 4D has the ability to have unlimited guest books
without using CGI. Setting up a guest book is easy, all configuration is done in your HTML editor.... no changes needed on Web Server 4D!

Visit our Guest Book at **http://www.mdg.com/ws4d-guestbook.html**

Directions on setting up a Guest Book Page

- Create your HTML page using your favorite HTML editor (adjust backgrounds, headers, footers, etc.
- Place a hidden field named "*WS4D_GUESTBOOK*" on the page.
- Place a text field named "name". This field will contain the name of the person submitting the entry.
- Place a text field named "email". This field will contain the Email Address of the person submitting the entry.
- Place a text field named "URL". This field will contain the URL of the person submitting the entry.
- Place a text field named "comments". This field will contain the comments of the person submitting the entry.
- Place a submit button named "Submit_Button".
- Place a hidden field named <NEW_ENTRY_HERE> at the location on the page where new comments should be submitted.
- The Form Action should contain exactly the same name as the page name. For example, if the page name is ws4d-guestbook and is on the server www.mdg.com, the form action would read:
- <FORM ACTION="http://www.mdg.com/ws4d-guestbook.html" ENCTYPE="ENCTYPE=x-www-form-encoded" METHOD="POST">

Advanced Stuff

Place a hidden field named "Text2Show" on the page. The Value of this field will contain the HTML that you want to add to the page that is only visible to the user who just submitted a form. For example, the following line:

```
<INPUT NAME="Text2Show" TYPE="hidden" Value="<center><i>=<b>Here are your
comments that were just added!</b></i></center><BR><BR>">
```

Will cause the following line to be added only for the user who just submitted the entry

Here are your comments that were just added!

Place a hidden field named "GIF2Show" on the page. The Value of this field will contain the location of a GIF or JPG file that you want to add to the page that is only visible to the user who just submitted a form. For example, the following line:

<INPUT NAME="GIF2Show" TYPE="hidden" Value="/gif/new.gif">

A HTML comment will automatically be created that contains the IP Address and the Cookie Value for the user posting the form. The cookie value will contain the date and time that the user first visited our server. For a demo of this tracking feature, go to our Guest Book and view the HTML source.

```
<!-- IP Address:  204.137.245.120, WS4D_Cookie=6/10/96_23:13:58_24495180 -->
```

Other fields (and field types) can be inserted in the form and will automatically appear on the submitted form. Most of the text fields are optional. If you leave one out, everything will still function normally.

Below is the HTML code that we use on our Guest Book. You site can have unlimited number of guest books. When an entry is submitted to the guest book, the actual HTML on the hard drive is updated. All this happens within Web Server without the need for CGI - which improves performance!

```
<HTML>
<HEAD>
<TITLE>WS4D GuestBook Sample Page</TITLE>
</HEAD>
<BODY BGCOLOR="#ffffff">
<FORM ACTION="http://www.mdg.com/ws4d-guestbook.html" ENCTYPE="ENCTYPE=x-www-
form-encoded"
METHOD="POST">
<INPUT NAME="*WS4D_GUESTBOOK*" TYPE="hidden">
<INPUT NAME="Text2Show" TYPE="hidden" Value="<center><i><b>Here are your
comments that were just added!</b></i></center><BR><BR>">
<H1>WS4D GuestBook Sample Page<BR>
<HR></H1>
Web Server 4D now includes the ability to have multiple guest books without using
CGI. A guest book allows any user to add comments to the page. All guest
books are created with any HTML editor (e.g. PageMill).<BR>
<BR>
For a demo, fill in the information below and enter the Submit button, your
comments will automatically be added to this page for others to view. <BR>
<BR>
```

```
<BR>
Name:<INPUT NAME="name" TYPE="text" SIZE="40">
<BR>
Email:<INPUT NAME="email" TYPE="text" SIZE="24">      URL: <INPUT NAME=
"URL" TYPE="text" SIZE="28">
<PRE>Comments:
<TEXTAREA NAME="comments" ROWS="2" COLS="68"
></TEXTAREA></PRE>
<PRE><CENTER><INPUT NAME="Submit_Button" TYPE="submit" VALUE="Submit">
</CENTER></PRE>

<NEW_ENTRY_HERE>
```

Web Server 4D Embed

The Embed allows WS4D to open a connection to a remote server and grab a full or partial page and display it within the currently served page. This happens as a page is requested, so another connection is opened up, the remote page is obtained and inserted in the requested page and then served to the browser.

The **exec** command allows you to embed local CGI results within an HTML page:

```
<!--#exec virtual="/cgi-bin/mycgi.cgi"-->
```

You can also use this command to obtain a remote page (or portion of a page) to be inserted.

```
<!--#exec virtual="http://www.cnn.com/{start-text=<h2>}{stop-
text=</h2>}{time2live=00:02}"-->
```

The above line will get the current headline from the CNN Web Site.

Note	For a demo of the above embed feature, visit http://www.mdg.com/4dws/embed/

The embedded information is obtained while your browser reads "Connect: Host xxx contacted. Waiting for reply..."

Here are some of the possible uses of this cool new feature:

- Create a scaleable web site. Add additional CPU's and have your DNS round-robin and load balance to many CPU's. Each CPU can grab updated pages from a master server and serve locally.
- Different departments can pull specific information from a single corporate site.
- Grab product/price lists from your suppliers web site - as soon as your supplier updates your page, your site is instantly updated.
- Let your CGI's run on remote CPU's

.

The possibilities are endless.

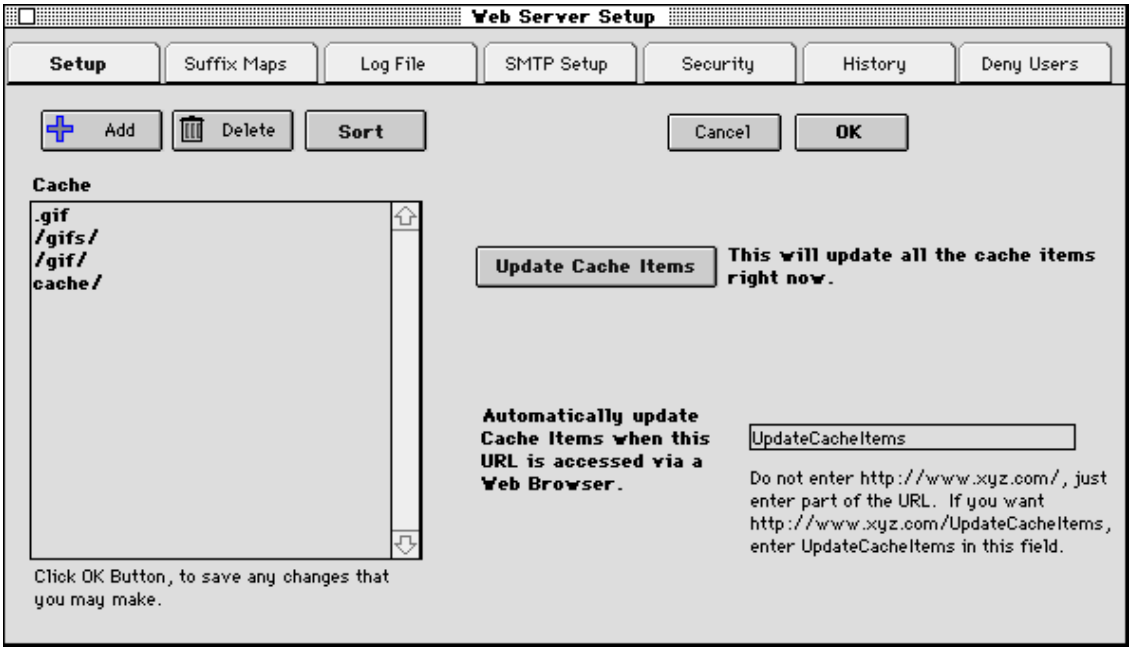
Web Server 4D Auto Cache

Web Server 4D has a new very important performance enhancing feature that you need to use. Web Server 4D has always had the ability to load your files into memory and then serve the files from memory (Web Page Setup area)

Now, Web Server 4D has a very easy to use feature that can increase performance of your web server. In your main Web Server 4D root directory (or any subdirectoy of server), create a folder named "Cache". Place any files that you would like automatically cached. Ideally, you will place files that do not get updated frequently, like GIF or JPEG files. Once these files are placed in this folder, they will automatically be cached by Web Server 4D the very first time that they are accessed.

Here is what happens when a file is cached:

- at very beginning of connection (before any other processing CGI Test, Authentication check, etc.), URL is checked to see if there is a "cache/" within the requested document's URL.
- If an item is requested, WS4D determines if this file is already cached (loaded in Cache). If it is not, it is automatically loaded/cached.
- Next, the file is served directed from memory to the browser (the IF-MODIFIED-SINCE tag is supported, so that if the client has a current copy of the file in the local browser cache, the file is not sent, instead, the browser is told to use the file in the cache)
- After sent, updating of log file, updating Recent Users Window, updating of other WS4D records is skipped (this is for maximum speed!)
- Connection is closed.



Cache

These are the matching items for the cache. Enter a ".gif" and any URL that contains a ".gif" will be cached. If you need to cache a specific folder, just enter that folder name.

Update Cache Items

Click this button and all cache items will be updated.

Update Via Browser

Create a URL that starts updating all cache items via a browser.

For the greatest speed possible, files that are located in the special cache folder are NOT checked against the modification date of the file sitting on the hard disk (this would just add more overhead - other files that are located in Web Page Setup that are not in the Cache folder will be checked). So, if you update a file in the cache folder, you will need to update in one of two ways:

- Go to WS4D Web Page Setup, select the cache item and click the Update button
- Update from browser by entering: http://www.yourserver.com/cache/update/logo.gif

Enter the word update after the word cache and before the file name. This will allow you to manually update the files in the cache without having to be at the Web Server 4D server (you will get a special message after updating - cache/logo.gif has been updated in the cache.)

Note Currently, cached files are limited to 32K in size.

WS4D Weather Agent

Starting with Web Server 4D 1.0.3, you will have the ability to insert the current weather (sites outside of US, will need to find a web site that contains the local weather information) directly in your home page. The temperature will automatically be obtained from a web site that publishes current weather information. Currently, we are grabbing this information from www.wunderground.com, the page that contains the weather for our site is: www.wunderground.com/forecasts/ORD.html, once we connect to that site, we pull the current temperature by defining the text that is at the beginning of the temperature and the text that is at the end of the temperature (you will need to look at the HTML of the page to determine the start and stop text).

After you tell WS4D about what site to pull the current weather, you will insert <CURRENT TEMPERATURE> on your HTML page and automatically, WS4D will insert the current temperature. You will be able to control how frequently the weather is pulled. Our copy is currently checking in every 30 minutes.

This will be a great way to add some personalized information on your web page.

Using the Weather Agent:

The current Weather Agent is controlled from a text file. Create a text file named **Weather** and place it in the **WS4D Settings** Folder.

Sample content of **Weather** File:

```
www.wunderground.com
/forecasts/ORD.html
80
120
<td><b>
&
30
3
unknown
1
```

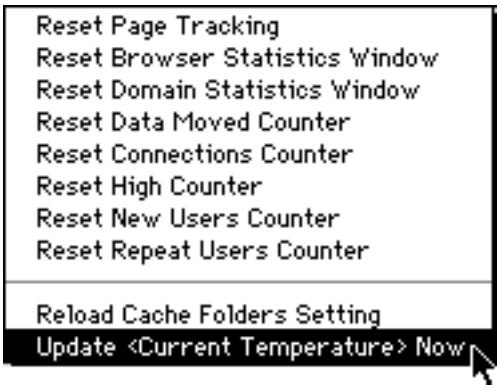
Line 1 = server to connect to (name of IP) (www.wunderground.com is a weather site)
Line 2 = page to access (after you access wunderground, found the page that is closest to your site)
Line 3 = port to access (port 80 is HTTP port)
Line 4 = timeout to wait for opening connection (seconds)
Line 5 = Start Text to look look for
Line 6 = Stop Text to look for
Line 7 = Minutes between connects (connect every XX minutes)
Line 8 = Maximum length of text to grab

Line 9 = value of <CURRENT TEMPERATURE> if text not found or exceeds maximum length
Line 10 = If error during connection, retry in minutes

Weather Agent Debugging/Testing

You can reload the settings file by opening Web Server 4D Setup and selecting <Update Current Temperature Now> from the Reset pop-up menu. If you hold down the Option Key you will be shown the actually HTML page that was grabbed along with other information.

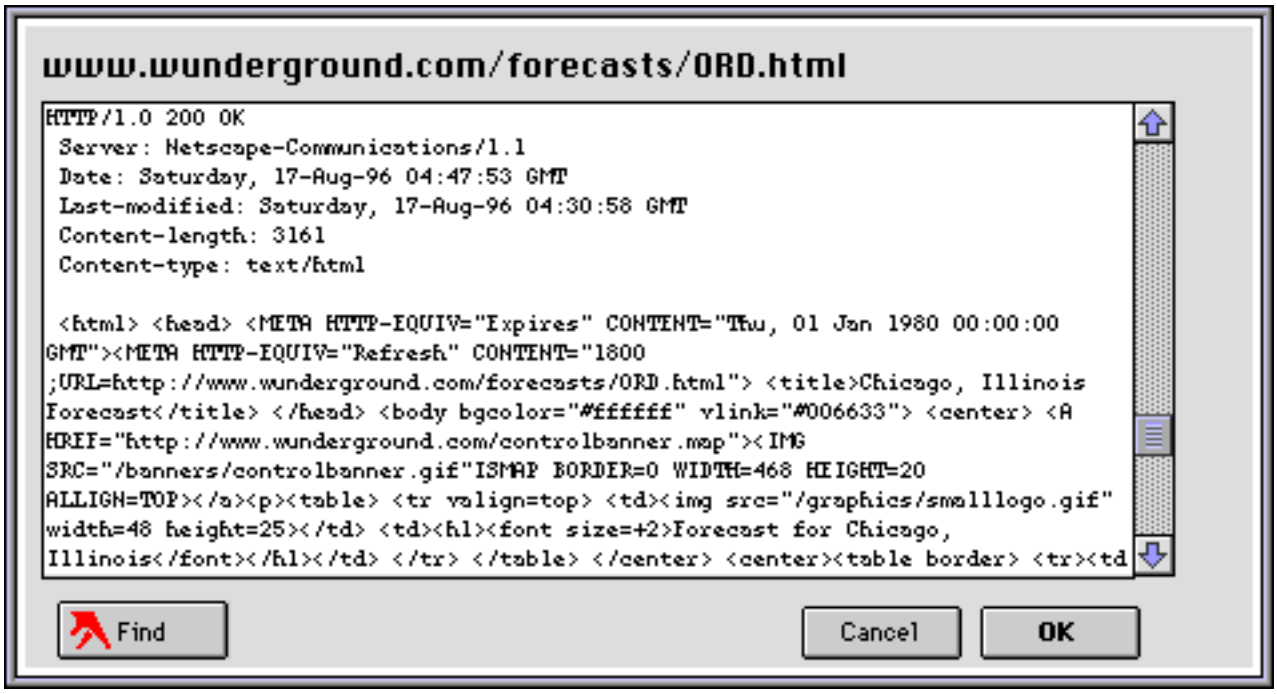
1) Go to Web Server 4D Setup and click on Reset Pop-up menu and select **Update <CURRENT TEMPERATURE> Now**:



2) Hold Down Option Key, until dialog box comes up telling you to release.

3) A debugging dialog box will be displayed and the document that was defined in the Weather text file will be displayed.

4) Finally, the actual value that is in between the Start and Stop text will be displayed.

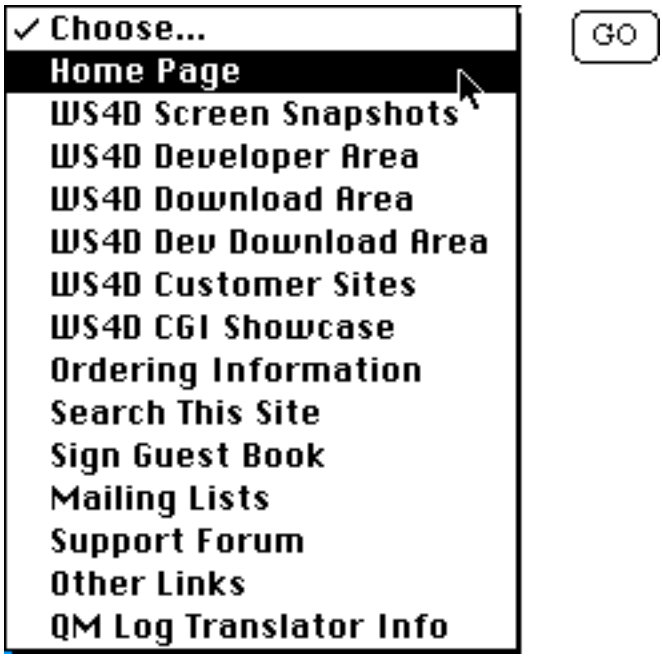


Note The current implementation of the Weather Agent is not limited to getting the Weather, actually, you could connected to any server and grab any data. When we add a more robost interface and allow unlimited agents to be created, you will be able to pull any data from any other web site and include it within your HTML pages.

See the Embed Feature for a more powerful and flexible method for grabbing information from any site.

Popup Page Navigation

Web Server 4D supports pop-up navigational. This page will provide information on how to add a pop up page navigational tool, like the example below (No CGI Needed!)

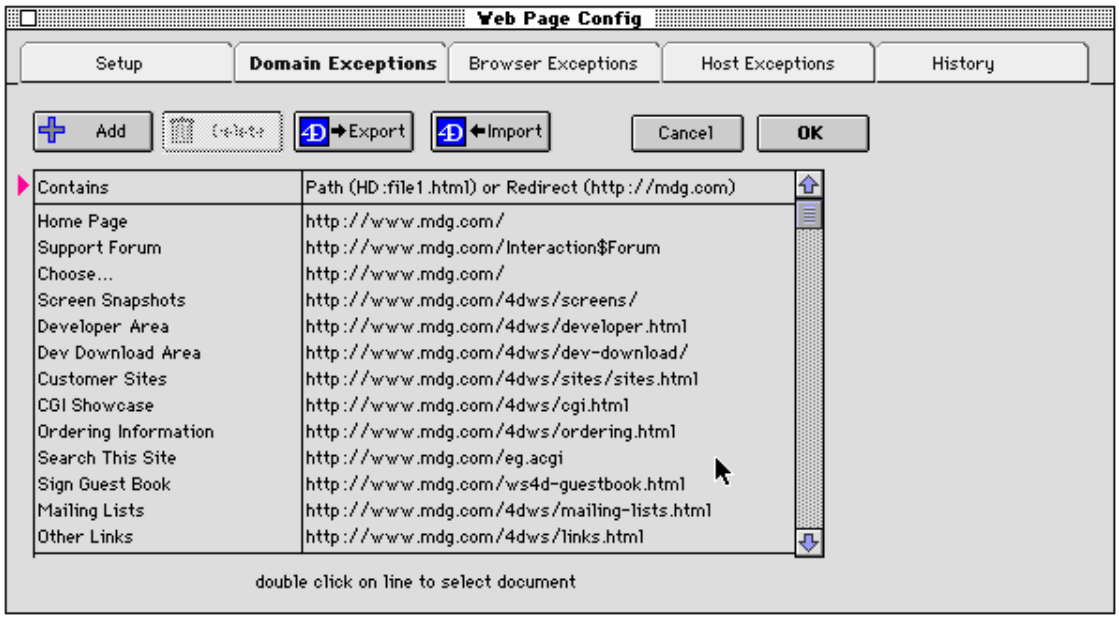


HTML Example:

```
<FORM; ACTION="http://www.mdg.com/PopupNavigate" ENCTYPE="ENCTYPE=x-www-form-
encoded"
METHOD="POST">
<H1;>Web; Server 4D - Popup Page Navigation</H1>
<CODE;><HR; ALIGN=center SIZE="5"></CODE>This; page will provide information
on how to add a pop up page navigational tool, like the example below.<BR;>
<BR;>
<BR;>
<SELECT; NAME="newPage">
<OPTION; SELECTED>Choose...;
<OPTION;>Home; Page
<OPTION;>WS4D; Screen Snapshots
<OPTION;>WS4D; Developer Area
<OPTION;>WS4D; Download Area
<OPTION;>WS4D; Dev Download Area
<OPTION;>WS4D; Customer Sites
<OPTION;>WS4D; CGI Showcase
<OPTION;>Ordering; Information
<OPTION;>Search; This Site
<OPTION;>Sign; Guest Book
<OPTION;>Mailing; Lists
<OPTION;>Support; Forum
<OPTION;>Other; Links
<OPTION;>QM; Log Translator Info
```

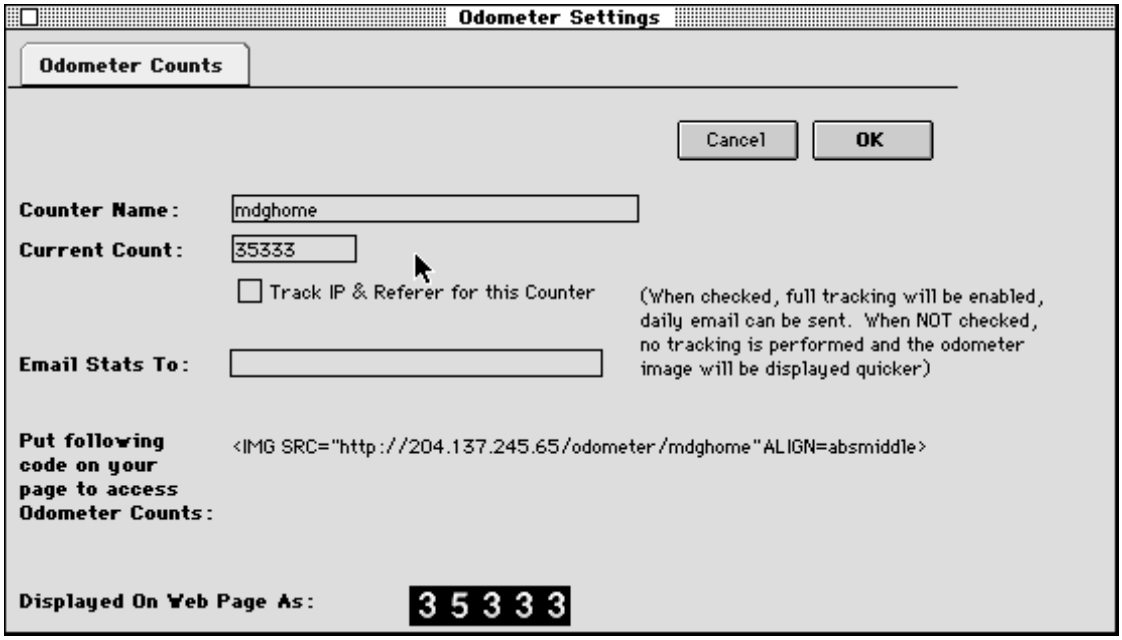
```
</SELECT>
<INPUT; NAME="*WS4D_Redirect2Page*" TYPE="hidden">
<INPUT; TYPE="submit" VALUE="GO">
</FORM>
```

Here is a screen snapshot of the page named /PopupNavigate in WS4D. You will need to enter a default redirect location on the first page and here the Domain Exceptions screen:



Odometer Page Counts

Web Server 4D has the ability to include Odometer Page counts on your pages or even pages from other servers. This is done without using CGI.



Counter Name

This is the name that you want to call this counter.

Current Count

This is the current count for this counter.

Email Stats To

Email address that should get nightly statistical info for this counter.

Code Sample

This code can be copied into your HTML document, it is the sample code that is used to access the counter. The counter name will automatically be preceded with a /odometer/. This will tell WS 4D to return the Odometer image.

Displayed As

This is the GIF file that is automatically returned!

Server Side File Include

Web Server 4D - Server Side Include Command

With a server side include, you can add one line of code and include an HTML document within an HTML document. This is very handy if you want the same footer to appear at the bottom of every home page (or the same header at the top)

Create the footer and insert the following line where you want the footer to be inserted:

<!-- #include file="footer.html"-->

In the future, if you ever need to change your footer, all you need to do is change one file, *not* all your pages!

Directions for using a Server Side Include:

Step 1	Insert Server Side Include in your HTML document, follow example from above.
Step 2	Pull Down on Web Page Setup and select Add, Select Import Default Doc and select the HTML document that contains the Server Side Include.. After importing the document, you should see a <1-- #include file= in the HTML tag area. Click OK.
Step 3	Optionally, you can load the included file too (this will allow the included file to be loaded from memory and no disk access. When creating the included file, make sure that you do not have <HTML> or <BODY> tags, as these will not be needed.

Make sure that the included file is AT your Web Server 4D root (or else specify the folder RELATIVE TO THE ROOT (e.g. folder1/etc/etc/footer.html)
The footer below is being generated from a server side include (can you tell?

Language Support

Wouldn't it be great if you could deliver your pages/graphics in different languages and automatically send them with the correct language to a user?

<!-- #include file="4dws/language/demo.html"-->

Starting with Web Server 4D 1.0.5, you can automatically deliver html, gif, jpeg files in the requested language of the user on the fly. Most browsers have the ability to send a request for a specific language when requesting a file from a web server. This language setting is set in the Browser's preferences.

Here is how it works. Lets say that you have a file named index.html and you want to deliver it in different languages. Create your index.html (as your default document), and then create the following:

[en]index.html
[fr]index.html
[de]index.html
[it]index.html

The appropriate document will be delivered automatically to the browser when a language is requested. Check browsers for the different languages requested, here are a few:

English	[en]
English/United States	[en-US]
English/United Kingdom	[en-GB]
French	[fr]
French/France	[fr-FR]
French/Canada	[fr-CA]
German	[de]
Japanese	[ja]
Chinese	[zh]
Chinese/China	[zh-CN]
Chinese/Taiwan	[zh -TW]
Korean	[ko]
Italian	[it]
Spanish	[es]
Spanish/Spain	[es-ES]
Portuguese	[pt]
Portugiese/Brazil	[pt-BR]

You can use the requested language feature when using the SSI included file feature, for example:

[en]footer.html
[fr]footer.html
[de]footer.html
[it]footer.html

You can use the requested language feature when delivering any other file type, such as gif or jpeg files (or even QuickTime movies).

Deny Feature

Deny Users

This Deny Feature will have many useful options that any web administrator will love!

- Ability to block specific IP address or IP range
- Ability to define the maximum concurrent connections allowed per user
- Ability to automatically Deny Future connections from anyone who exceeds the maximum
- Ability to send an Email when someone is automatically added to the Deny List.

Of course, there will be the standard Deny List, just enter the IP address (or partial IP address, e.g., 90.25.25 will deny all users whose IP address starts with 90.25.25).

There is a new threat to most Web Servers, it is called a Denial of Service Attack, and it can render your web server unusable. Basically, someone can open connections to your server and never request a document, if they do this 50 times in one second, your web server will wait until the timeout and reset the connections, usually 60-120 seconds, during this time, no other users can connect to your server!

Web Server 4D allows you to set the Maximum Concurrent Connections Allowed Per User, normally, a browser will only open 4 connections at a time, now you have a way to limit the number of connections. We recommend that you set this number to at least 10 and recommend 15-20.
Web Server 4D can not only block a user who tries to flood your server with open connections, but can also Automatically Deny Future Connections to this IP Address.

Web Server 4D can also send you an Email whenever a IP Address is automatically added to the Deny List. Below is a sample of the Email that is sent:

Subject: Added 204.137.245.253 To Deny List!
Sent: 11/19/96 6:18 AM
Received: 11/19/96 12:19 AM
From: web-server-4D@mdg.com
To: sales@mdg.com

At Tuesday, November 19, 1996 at 12:19 AM 204.137.245.253 was automatically added to the deny list, since there was a total of 15 connections from this IP address.

In order to support the Denial of Service Attack, Web Server 4D immediately closes the connection, instead of waiting for the browser to finish sending data. This way the

connection cannot be held open. So, if someone who is in the deny list tries to connect to your Web Server 4D server, they will immediately get a Document Contains No Data, or Pipe Broken message. This is the only way to prevent a Denial of Service Attack. If you require a message to be sent back to the user, instead of using the Deny feature, use the redirection feature, to redirect specific users to a specific document.

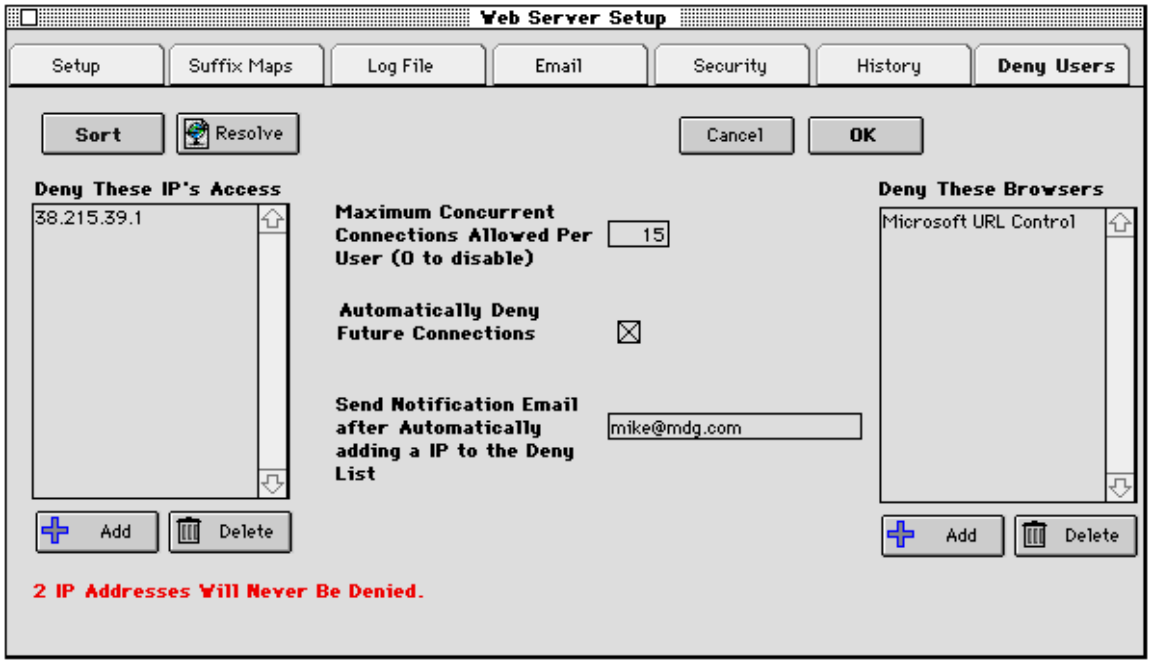
Most servers that support deny will wait for the complete request to come in from the user and then send a deny message if they should get one. The problem, is that someone, can open a connection to the web server and then never send any data, the web server will wait until its timeout period, usually 60-180 seconds before resetting the connection. If someone opens 50 connections like this, it will lock up the server for 60-180 seconds and no other users can connect.

The following three lines of 4D code would render the web server at 204.137.245.33, unusable for 1-3 minutes, and no other users would be able to connect. With a little loop, a server could be rendered useless.

the following 3 lines were removed, as it could render any mac web server that wasn't running Web Server 4D completely unusable. As this is an important feature, we do not want to create undue harm on fellow users.

The way that Web Server 4D handles denies is a little different. Basically, if you are on the deny list, the connection will be closed as soon as it is opened, the server will not wait for any data to be sent, this way, someone will not be able to lock out other users from connecting to the server. The only down side to this approach, is that the user will not get a message saying there were denied, but rather a browser error message. If Web Server 4D were changed to send back a message, it would have to wait for the connection and could become locked up if no data is sent.

Also, Web Server 4D can automatically add this IP address to the Deny list and prevent future connections from taking place and notify you via Email when this has happened.



Most servers that support deny will wait for the complete request to come in from the user and then send a deny message if they should get one. The problem, is that someone, can open a connection to the web server and then never send any data, the web server will wait until its timeout period, usually 60-180 seconds before resetting the connection. If someone opens 50 connections like this, it will lock up the server for 60-180 seconds and no other users can connect.

Deny Browsers

This feature allows you to deny certain type of browsers from accessing any of your pages. Why would you want to do this? Some browsers really are not browsers - but instead are site suckers. These site suckers will suck every page from your site - some are very unfriendly to servers, now you can prevent them from accessing your site and disrupting your server.

Database Publishing Using WS4D

Web Server 4D has the ability to publish unlimited databases with ease. The following features are built into Web Server 4D Database Publishing:

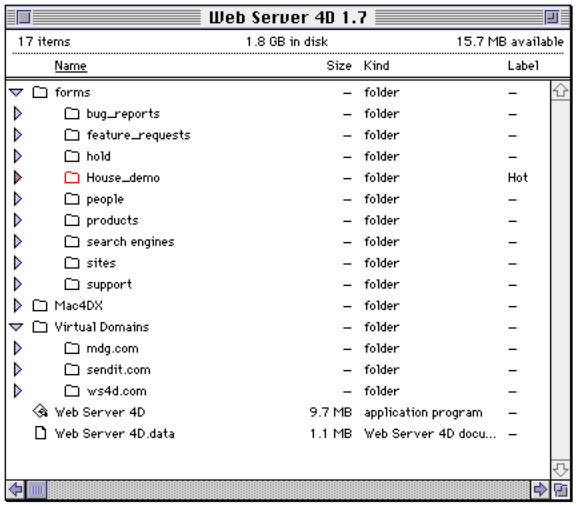
- Define Searches, Results, Tables, required fields, sorting, records per page all from hidden HTML - no changes need on the server.
- Picture to GIF on the fly conversion. Also can use a text field to reference an external gif or jpg file. If external file is not found, instead of a broken link at the browser, a text message that states "missing file123.gif". Also, you will have the ability to specify the height and width of the external file (great for showing a thumbnail view of the picture.)
- Field Formatting (including Email and URL formatting)
- Database to HTML lists - store your HTML lists in an easy to modify database.
- Record Navigation (Next 10, Previous 10, Page 1 of 10)
- All results stored in external HTML files, so it is easy to make changes remotely.
- Each record in the database can have an optional Name and Password, which is needed to enter before a record can be deleted or modified. This is entered by the user when they create a record.
- Automatic Email When Record Added.
- Ability to Import and Export Data.
- No CGI, No AppleScript, No C++, No FileMaker, and even No 4D - all databases changes are embedded in hidden fields on your HTML forms.
- Wicked Fast - no middleman, no cgi, no plugin, no external databases, just one application.

Overview

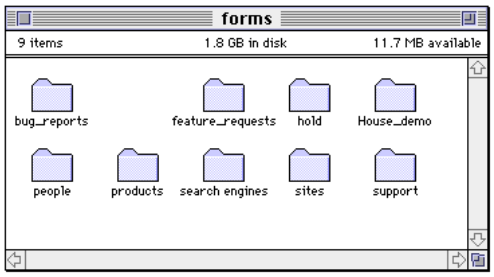
Forms Folder

Web Server 4D introduces a new way to publish unlimited databases on the web, via HTML. Setup of the database, specifying fields to use, which forms to use, which fields are required are all defined in HTML hidden fields.

To publish a database, make sure that you have a folder named Forms in the same folder as Web Server 4D. Inside the Forms folder, you can have additional folders for each database that you want to use.

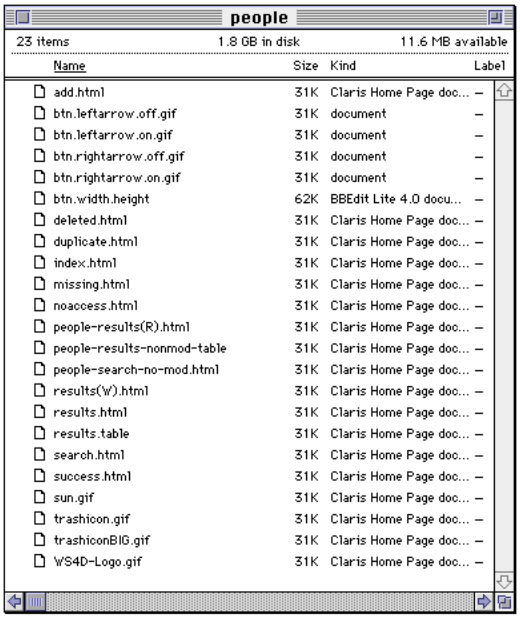


You may download preset databases from MDG (or other developers) and to activate the new database, all you do, is drop the complete folder in the Forms folder and the database is immediately available from your Browser, no need to change anything at your server!



Database Folder Contents

Inside each database folder will be specific forms that define the searching, results, tables, no access, required fields and button navigation.



Note If you want to publish your own database, start with one of the demos and change the HTML - this will allow you to publish new databases in minutes!

Search Form

The Search Form is the most important form, it defines the file name to use, the results page to use, the results table to use and the 1 record form to use.

Action	Sample HTML
Define which Database to Use. You can make up any name that you want. Just by changing the name, you will be creating a new database.	<INPUT TYPE="hidden" NAME="Condition" VALUE="is"><INPUT TYPE="hidden" NAME="!!_[Database]Name_!!" VALUE="PEOPLE">
Define your search fields. Each Search field must have a Condition Field before the field.	<INPUT TYPE="hidden" NAME="Condition" VALUE="starts with"><INPUT TYPE="text" NAME="!!_[Database]Field02_!!" VALUE="" SIZE=28>
This Hidden field is required. This tells WS4D to use the Database named Database.	<INPUT TYPE="hidden" NAME="Database" VALUE="Database">
This **optional** field will break your tables into smaller tables. Tables will not be displayed until the last row is received, this allows the browser to see larger tables quicker.	<INPUT TYPE="hidden" NAME="BreakTable" VALUE="10">
This **required** field must be set exactly as is show, with a value of zero.	<INPUT TYPE="hidden" NAME="Page" VALUE="0">

This field is required if you want to give the user the abiltiy to click on a URL to see the 1 record view.	<INPUT TYPE="hidden" NAME="LinkField" VALUE="!!_[Database]Field01_!!">
This **required** field is needed to show the results of the search	<INPUT TYPE="hidden" NAME="Results" VALUE="results.html">
This **required** field defines the table that will get inserted in the Results page.	<INPUT TYPE="hidden" NAME="Results-Table" VALUE="results.table">
This **optional** field, will display a message if any fields that are defined as required are blank.	<INPUT TYPE="hidden" NAME="missing.html" VALUE="missing.html">
This **optional** field can be either a hidden field or if you want to give the user the ability to specify the number of records per page to return, you can make this a pop-up field. If you omit this field, a default value of 10 will be assumed.	<INPUT TYPE="hidden" NAME="RecordsPerPage" VALUE="10">

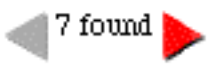
Note Copy the hidden fields from one of the existing examples and use that as your starting point when creating new databases.

Results Form

The results form is the first page that is displayed after a search is performed. There are 3 tags that you insert on the Results Form that will automatically be filled in by Web Server 4D.

<Insert Navigation Here>

By inserting the **required** tag, Web Server 4D will automatically place record navigation on the results page. The total number or records found and what current page is being displayed will automatically be displayed where ever you place this tag.



Page 1 of 2

<Insert Results Here>

By inserting the **required** tag, Web Server 4D will automatically create one row in the table that you define.

Marco Tosi		tosi@icom.it	http://www.icom.it
Mel Bohince	Arkay Packaging	melbohince@arkay.com	http://home.att.net/~melbohince/
Micahael KLusek	interactive Information	mklusek@ricochet.net	
Michael Ginsberg	MDG Computer Services, Inc.	mike@mdg.com	http://www.mdg.com/
mike	mdg	mike@mdg.com	http://mdg.com

<Insert Search Here>

By inserting the **optional** tag, Web Server 4D will display the search in a written out format.

Searching People, First Name Starts With M

Results Table

The results table is the HTML table that gets inserted in the Results Form. This table will contain one row for each matching record based on the search.

!!_[Database]Field01_!!	!!_[Database]Field02_!!	!!_[Database]Field03;Email_!!	!!_[Database]Field11;URL FRAME11_!!

Add Form

The Add form, is the form that allows you to add records into the database.

Field	Sample HTML
Each field that you want to save to the database, must reference one of the fields in the database.	<INPUT TYPE="text" NAME="!!_[Database]Field01_!!" VALUE="" SIZE=30>
You can make any field a **required field** by adding a **-REQ** to the fieldname.	<INPUT TYPE="text" NAME="!!_[Database]Field01-REQ_!!" VALUE="" SIZE=30>
This **optional** field will break your tables into smaller tables. Tables will not be displayed until the last row is received, this allows the browser to see larger tables quicker.	<INPUT TYPE="hidden" NAME="Database" VALUE="Database">

This **required** field defines the name of the database to use.	<INPUT TYPE="hidden" NAME="[Database]Name" VALUE="People">
This **required** field defines the page to send back to the user if the record was successfully added.	<INPUT TYPE="hidden" NAME="Success" VALUE="success.html">
This **required** field defines the page to send back to the user if the record was not successfully added.	<INPUT TYPE="hidden" NAME="Failure" VALUE="failure.html">
This **required** field must show exactly as it does here, do not change this field.	<INPUT TYPE="hidden" NAME="RecordNumber" VALUE="-1">
This **optional** field defines the field that should be unique when a record is added.	<INPUT TYPE="hidden" NAME="Unique Field" VALUE="!!_[Database]Field01_!!">
This **optional** field defines the form to show if a record is not unique	<INPUT TYPE="hidden" NAME="Unique Error" VALUE="unique.html">
This **optional** field allows you to enter a name that must be entered when ever modifying or deleting. Must also have _AccessPassword.	<INPUT TYPE="hidden" NAME="_AccessName" VALUE="Access Name">
This **optional** field allows you to enter a password that must be entered when ever modifying or deleting. Must also have _AccessName.	<INPUT TYPE="hidden" NAME="_AccessPassword" VALUE="Access Password">
Each field in the database has a name like Field03. You can define the name of the field which will be displayed back to the user if the field is blank and is required. In the example to the right, a message would appear to the user telling them that “Email Address is blank”, instead of “Field03 is blank”.	<INPUT TYPE="hidden" NAME="Field03" VALUE="Email Address">
Here is the HTML that you can add to automatically send an Email whenever a record is added to the database.	<INPUT TYPE="hidden" NAME="SendEmailTo" VALUE="!!_[Database]Field03_!!"> <INPUT TYPE="hidden" NAME="SendEmailFrom" VALUE="info@mdg.com"><INPUT TYPE="hidden"

	NAME="SendEmailSubject" VALUE="WS4D People Record Added"><INPUT TYPE="hidden" NAME="SendEmailMessage" VALUE="*** PLEASE SAVE THIS EMAIL ***-CR--CR-!!_[Database]Field01_!! was added to our database on <DATE_SHORT> at <TIME>.-CR--CR-To modify your entry, you will need to visit http://people.ws4d.com, do a search-CR-for your entry and modify it with the following:-CR--CR-Name = !!_[Database]_AccessName_!!-CR-password = !!_[Database]_AccessPassword_!!.-CR--CR-Thank you for submitting your site to our WS4D Database.-CR--CR-MDG Computer Services, Inc.-CR-http://www.mdg.com/">

1 Record Form

The one record form is used whenever a LinkField is defined and a user clicks on the LinkField. The 1 Record Form has the same fields as the Add Record Form, except that in the values of all the HTML fields, will be the fieldname (e.g. !!_[Database]Field03_!!)

Note If the text string (W) is present in the filename of the 1 Record Form (e.g. Show-People(W).html), the form can be updated and resubmitted back to the database.

Database Fields

Below are the fields that are available to you

Field Name (Bold = indexed)	Field Type	Field Length
!!_Database]Boolean01_!!	Boolean	
!!_[Database]Date1_!!	Date	
!!_[Database]Date4_!!	Date	
!!_[Database]Field01_!!	Alpha	80
!!_[Database]Field02_!!	Alpha	80
!!_[Database]Field03_!!	Alpha	80
!!_[Database]Field04_!!	Alpha	80
!!_[Database]Field05_!!	Alpha	80
!!_[Database]Field06_!!	Alpha	80
!!_[Database]Field07_!!	Alpha	80

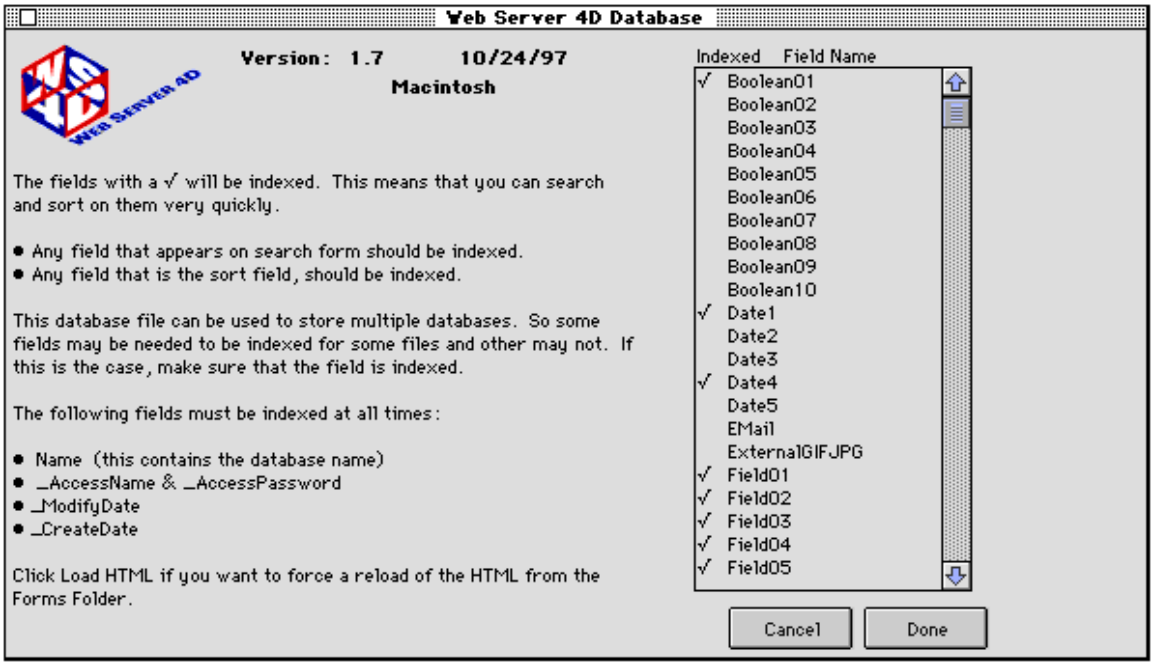
!!_[Database]Field08_!!	Alpha	80
!!_[Database]Field09_!!	Alpha	80
!!_[Database]Field10_!!	Alpha	80
!!_[Database]Field21_!!	Alpha	80
!!_[Database]Field23_!!	Alpha	80
!!_[Database]Field24_!!	Alpha	80
!!_[Database]Field25_!!	Alpha	80
!!_[Database]Field26_!!	Alpha	80
!!_[Database]Name_!!	Alpha	20
!!_[Database]Number1_!!	Real	
!!_[Database]Time1_!!	Date	
!!_[Database]URL_!!	Alpha	80
!!_[Database]_AccessName_!!	Alpha	40
!!_[Database]_AccessPassword_!!	Alpha	40
!!_[Database]_CreateDate_!!	Date	
!!_[Database]_ModifyDate_!!	Date	
!!_[Database]Boolean02_!!	Boolean	
!!_[Database]Boolean03_!!	Boolean	
!!_[Database]Boolean04_!!	Boolean	
!!_[Database]Boolean05_!!	Boolean	
!!_[Database]Boolean06_!!	Boolean	
!!_[Database]Boolean07_!!	Boolean	
!!_[Database]Boolean08_!!	Boolean	
!!_[Database]Boolean09_!!	Boolean	
!!_[Database]Boolean10_!!	Boolean	
!!_[Database]Date2_!!	Date	
!!_[Database]Date3_!!	Date	
!!_[Database]Date5_!!	Date	
!!_[Database]EMail_!!	Alpha	80
!!_[Database]ExternalGIFJPG_!!	Text	
!!_[Database]Field11_!!	Alpha	80
!!_[Database]Field12_!!	Alpha	80
!!_[Database]Field13_!!	Alpha	80
!!_[Database]Field14_!!	Alpha	80
!!_[Database]Field15_!!	Alpha	80
!!_[Database]Field16_!!	Alpha	80
!!_[Database]Field17_!!	Alpha	80
!!_[Database]Field18_!!	Alpha	80
!!_[Database]Field19_!!	Alpha	80
!!_[Database]Field20_!!	Alpha	80
!!_[Database]Field22_!!	Alpha	80
!!_[Database]Field27_!!	Alpha	80
!!_[Database]Field28_!!	Alpha	80
!!_[Database]Field29_!!	Alpha	80
!!_[Database]Field30_!!	Alpha	80
!!_[Database]Field31_!!	Alpha	80
!!_[Database]Field32_!!	Alpha	80
!!_[Database]Field33_!!	Alpha	80
!!_[Database]Field34_!!	Alpha	80
!!_[Database]Field35_!!	Alpha	80
!!_[Database]Field36_!!	Alpha	80
!!_[Database]Field37_!!	Alpha	80
!!_[Database]Field38_!!	Alpha	80

!!_[Database]Field39_!!	Alpha	80
!!_[Database]Field40_!!	Alpha	80
!!_[Database]Key_!!	Subfile	
!!_[Database]MailTo_!!	Text	
!!_[Database]Number10_!!	Real	
!!_[Database]Number2_!!	Real	
!!_[Database]Number3_!!	Real	
!!_[Database]Number4_!!	Real	
!!_[Database]Number5_!!	Real	
!!_[Database]Number6_!!	Real	
!!_[Database]Number7_!!	Real	
!!_[Database]Number8_!!	Real	
!!_[Database]Number9_!!	Real	
!!_[Database]Picture1_!!	Picture	
!!_[Database]Picture2_!!	Picture	
!!_[Database]Picture3_!!	Picture	
!!_[Database]Picture4_!!	Picture	
!!_[Database]Picture5_!!	Picture	
!!_[Database]Text01_!!	Text	
!!_[Database]Text02_!!	Text	
!!_[Database]Text03_!!	Text	
!!_[Database]Text04_!!	Text	
!!_[Database]Text05_!!	Text	
!!_[Database]Text06_!!	Text	
!!_[Database]Text07_!!	Text	
!!_[Database]Text08_!!	Text	
!!_[Database]Text09_!!	Text	
!!_[Database]Text10_!!	Text	
!!_[Database]Text11_!!	Text	
!!_[Database]Text12_!!	Text	
!!_[Database]Text13_!!	Text	
!!_[Database]Text14_!!	Text	
!!_[Database]Text15_!!	Text	
!!_[Database]Text16_!!	Text	
!!_[Database]Text17_!!	Text	
!!_[Database]Text18_!!	Text	
!!_[Database]Text19_!!	Text	
!!_[Database]Text20_!!	Text	
!!_[Database]Text21_!!	Text	
!!_[Database]Text22_!!	Text	
!!_[Database]Text23_!!	Text	
!!_[Database]Text24_!!	Text	
!!_[Database]Text25_!!	Text	
!!_[Database]Text26_!!	Text	
!!_[Database]Text27_!!	Text	
!!_[Database]Text28_!!	Text	
!!_[Database]Text29_!!	Text	
!!_[Database]Text30_!!	Text	
!!_[Database]Text31_!!	Text	
!!_[Database]Time2_!!	Date	
!!_[Database]Time3_!!	Date	
!!_[Database]Time4_!!	Date	
!!_[Database]Time5_!!	Date	
!!_[Database]_CreateIP_!!	Alpha	20

!!_[Database]_CreateTime_!!	Date	
!!_[Database]_ModifyBy_!!	Alpha	20
!!_[Database]_ModifyHistory_!!	Text	
!!_[Database]_ModifyIP_!!	Alpha	20
!!_[Database]_ModifyTime_!!	Date	
!!_[Database]_ModifyTimes_!!	Longint	

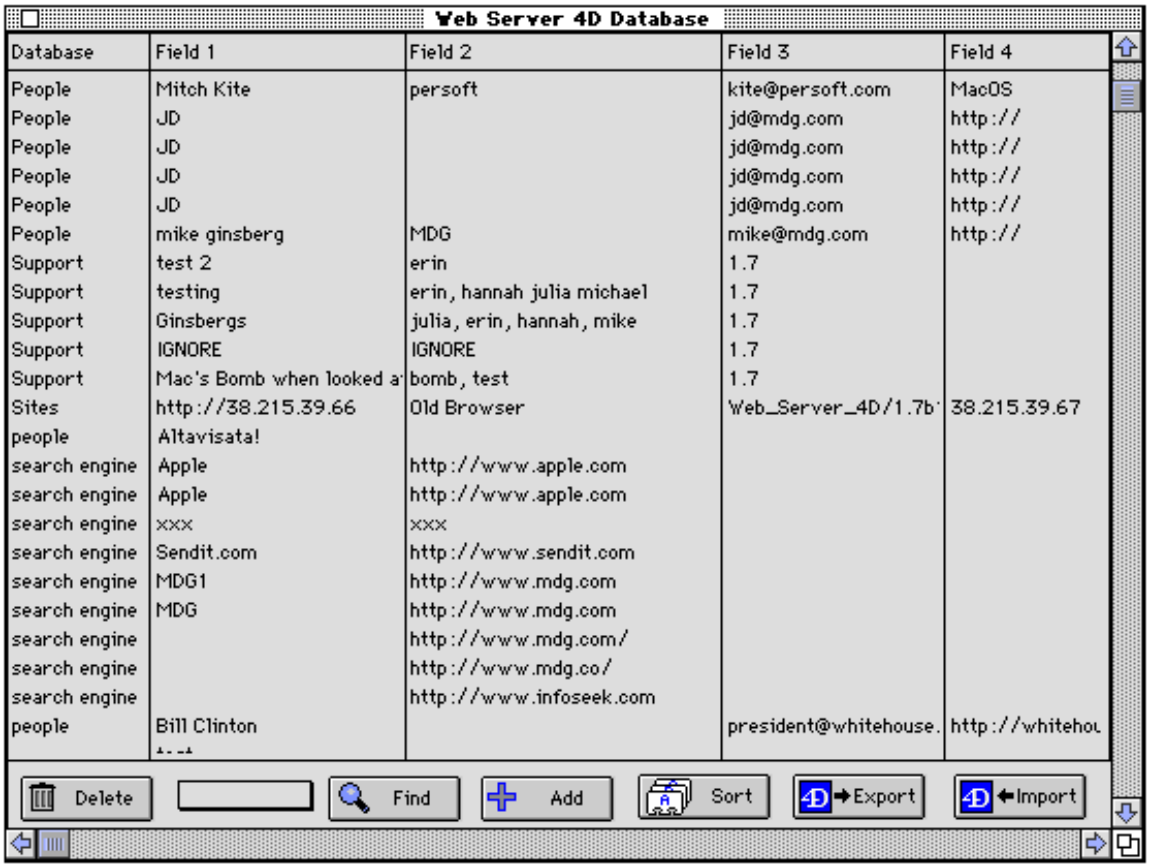
Database Indexes

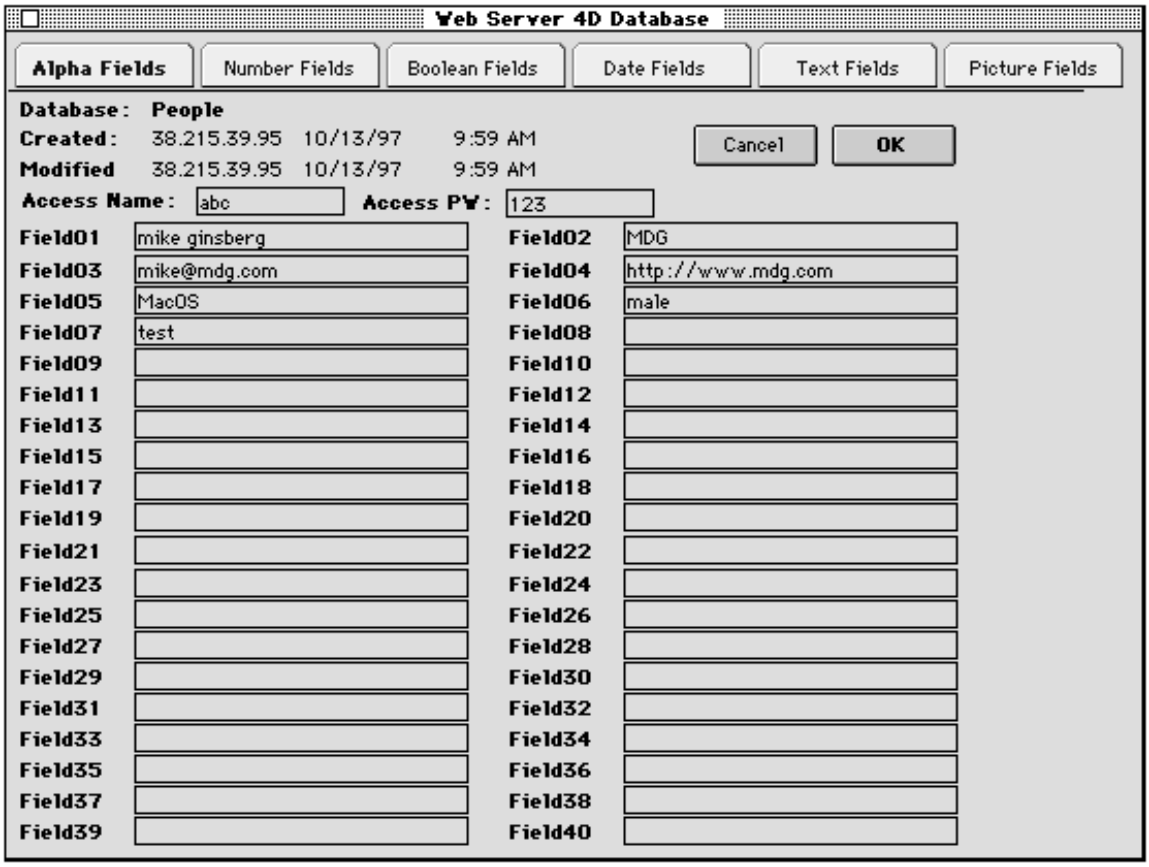
The database indexes dialog box is used to turn on indexing for specific fields in your database.

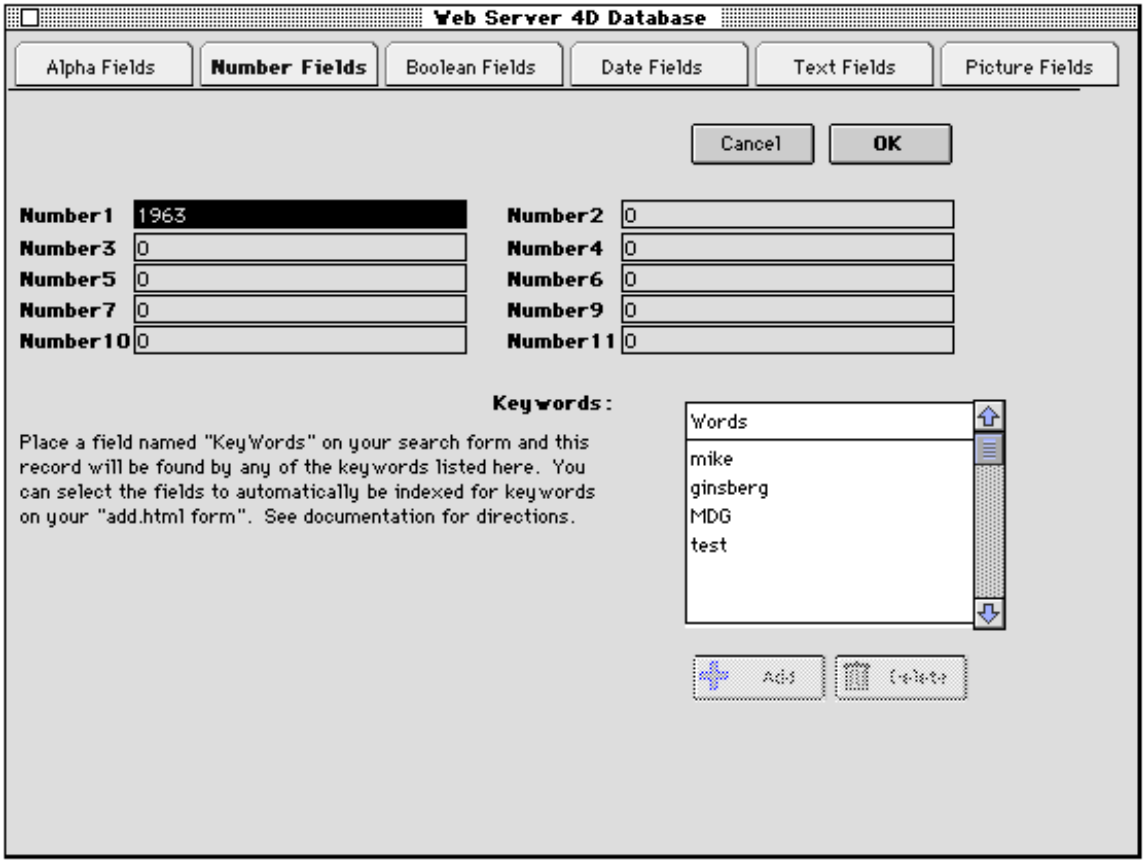


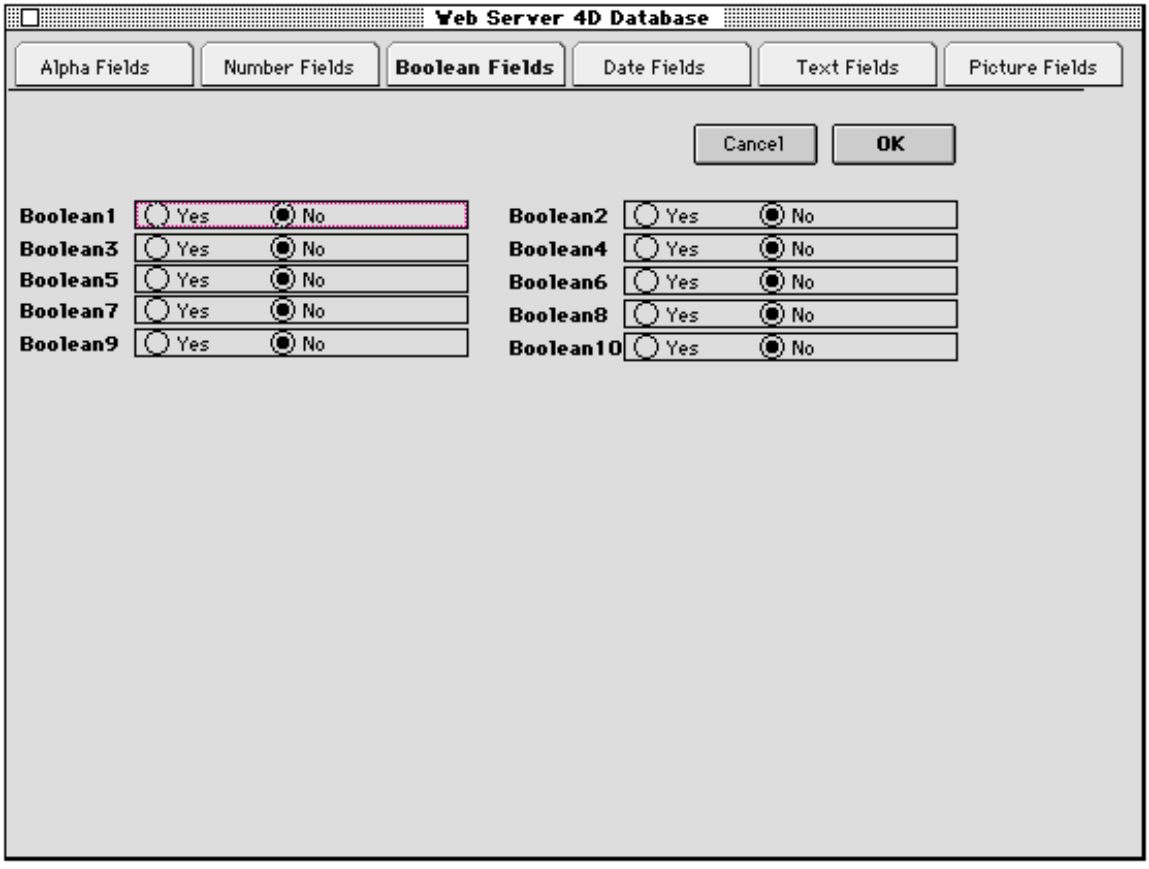
Show Database

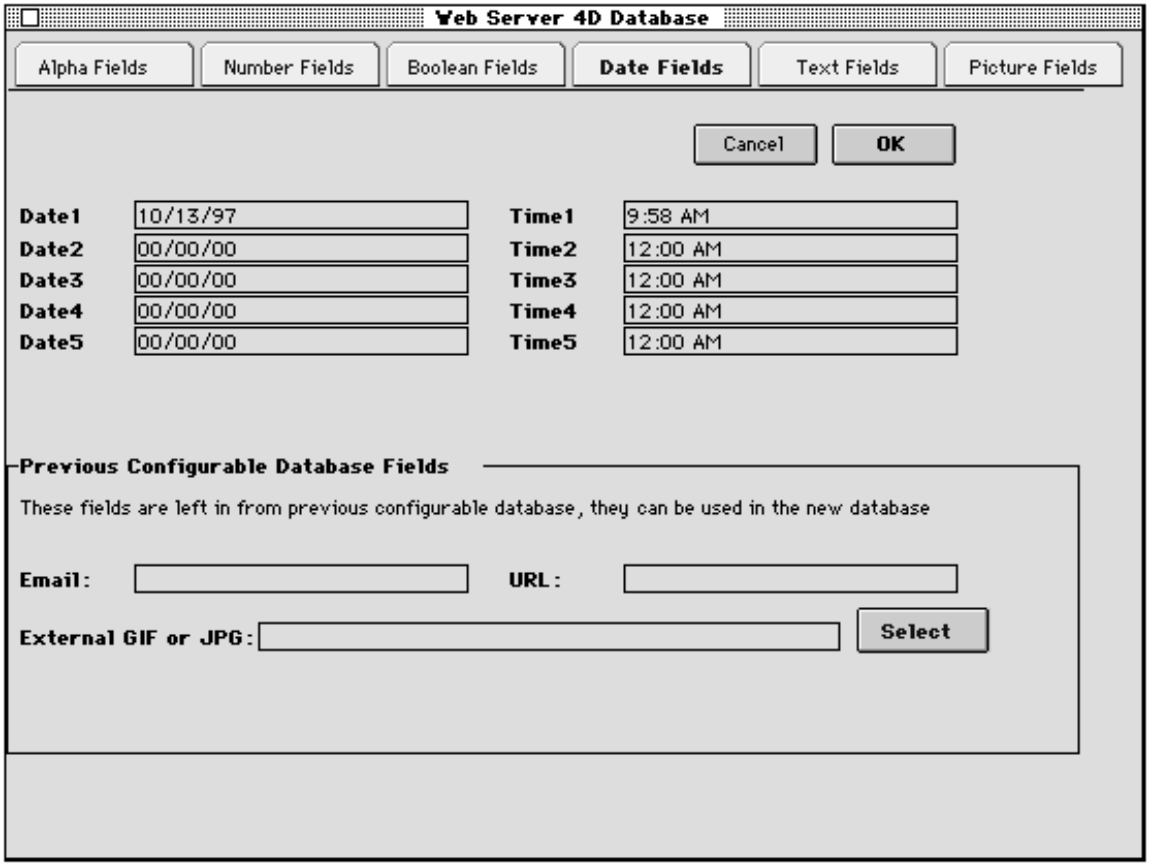
This dialog box is used to edit or add new records to the built-in databases. If you are creating a new record for a database, it is important that you fill in the field named Database with the correct name.

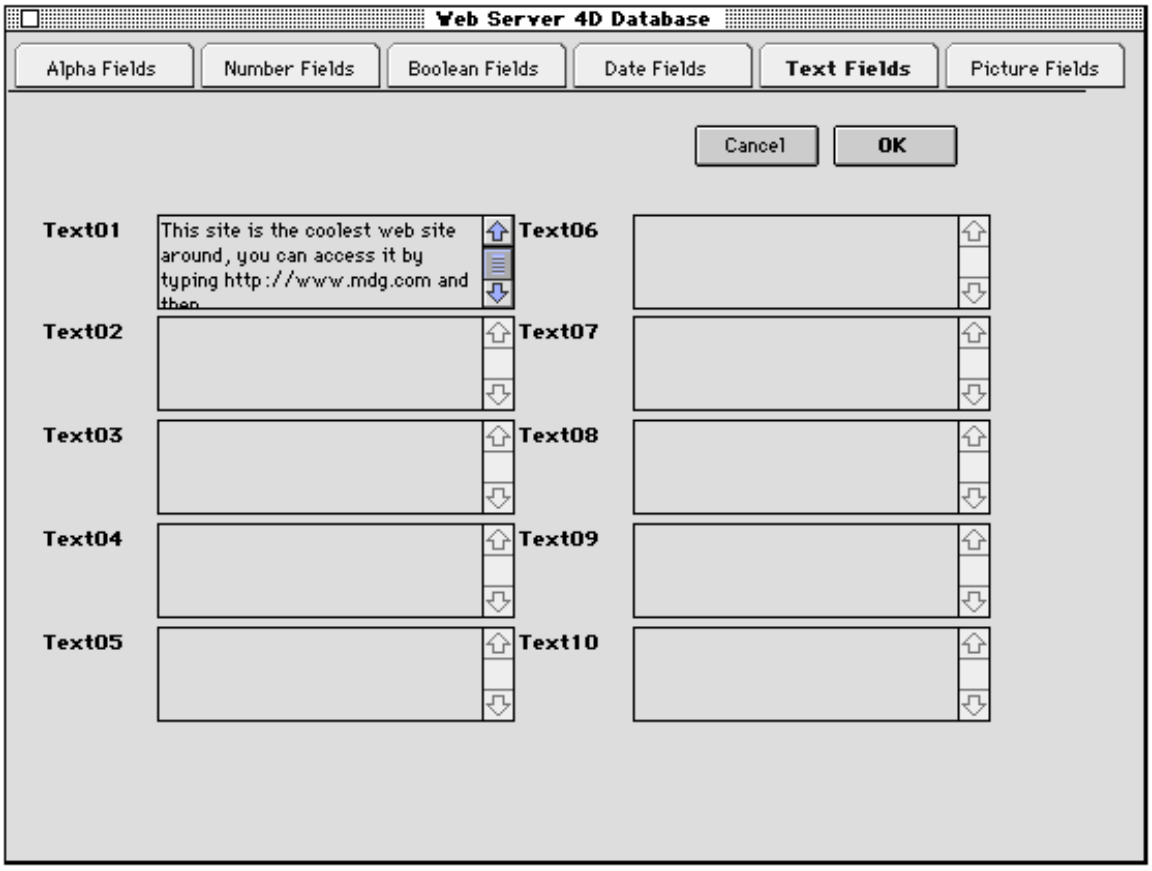

Web Server 4D Database
Database
Field 1
Field 2
Field 3
Field 4
People Mitch Kite persoft kite@persoft.com MacOS
People JD jd@mdg.com http://
People JD jd@mdg.com http://
People JD jd@mdg.com http://
People JD jd@mdg.com http://
People mike ginsberg MDG mike@mdg.com http://
Support test 2 erin 1.7
Support testing erin, hannah julia michael 1.7
Support Ginsbergs julia, erin, hannah, mike 1.7
Support IGNORE IGNORE 1.7
Support Mac's Bomb when looked a bomb, test 1.7
Sites http://38.215.39.66 Old Browser Web_Server_4D/1.7b 38.215.39.67
people Altavisata!
search engine Apple http://www.apple.com
search engine Apple http://www.apple.com
search engine xxx xxx
search engine Sendit.com http://www.sendit.com
search engine MDG1 http://www.mdg.com
search engine MDG http://www.mdg.com
search engine http://www.mdg.com/
search engine http://www.mdg.co/
search engine http://www.infoseek.com
people Bill Clinton president@whitehouse. http://whitehou
Delete
Find
Add
Sort
Export
Import

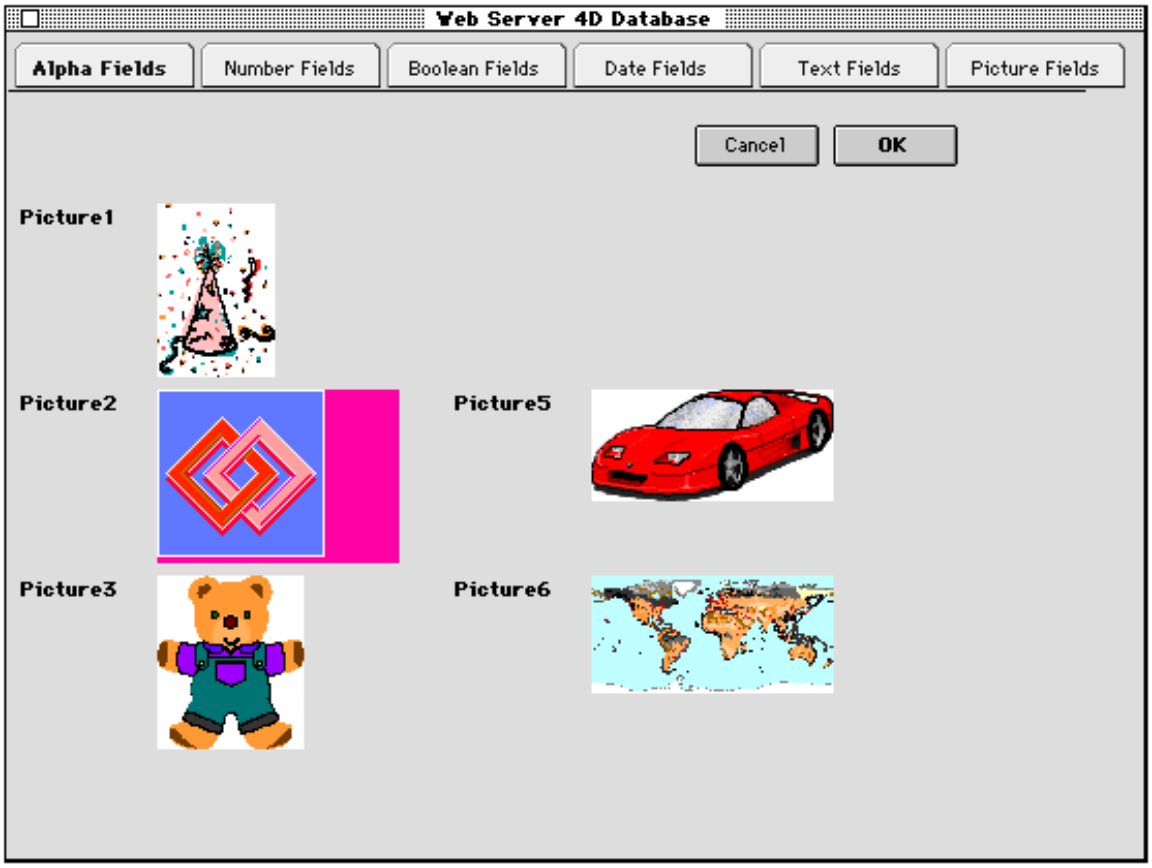

Web Server 4D Database
Alpha Fields
Number Fields
Boolean Fields
Date Fields
Text Fields
Picture Fields
Database: People
Created: 38.215.39.95 10/13/97 9:59 AM
Modified 38.215.39.95 10/13/97 9:59 AM
Cancel
OK
Access Name: abc
Access PW: 123
Field01 mike ginsberg
Field02 MDG
Field03 mike@mdg.com
Field04 http://www.mdg.com
Field05 MacOS
Field06 male
Field07 test
Field08
Field09
Field10
Field11
Field12
Field13
Field14
Field15
Field16
Field17
Field18
Field19
Field20
Field21
Field22
Field23
Field24
Field25
Field26
Field27
Field28
Field29
Field30
Field31
Field32
Field33
Field34
Field35
Field36
Field37
Field38
Field39
Field40


Web Server 4D Database
Alpha Fields
Number Fields
Boolean Fields
Date Fields
Text Fields
Picture Fields
Cancel
OK
Number1 1963
Number2 0
Number3 0
Number4 0
Number5 0
Number6 0
Number7 0
Number9 0
Number10 0
Number11 0
Keywords:
Place a field named "KeyWords" on your search form and this record will be found by any of the keywords listed here. You can select the fields to automatically be indexed for keywords on your "add.html form". See documentation for directions.
Words
mike
ginsberg
MDG
test
Add
Delete


Web Server 4D Database
Alpha Fields
Number Fields
Boolean Fields
Date Fields
Text Fields
Picture Fields
Cancel
OK
Boolean1 Yes No
Boolean2 Yes No
Boolean3 Yes No
Boolean4 Yes No
Boolean5 Yes No
Boolean6 Yes No
Boolean7 Yes No
Boolean8 Yes No
Boolean9 Yes No
Boolean10 Yes No


Web Server 4D Database
Alpha Fields
Number Fields
Boolean Fields
Date Fields
Text Fields
Picture Fields
Cancel
OK
Date1
10/13/97
Time1
9:58 AM
Date2
00/00/00
Time2
12:00 AM
Date3
00/00/00
Time3
12:00 AM
Date4
00/00/00
Time4
12:00 AM
Date5
00/00/00
Time5
12:00 AM
Previous Configurable Database Fields
These fields are left in from previous configurable database, they can be used in the new database
Email:
URL:
External GIF or JPG:
Select


Web Server 4D Database
Alpha Fields
Number Fields
Boolean Fields
Date Fields
Text Fields
Picture Fields
Cancel
OK
Text01
This site is the coolest web site around, you can access it by typing http://www.mdg.com and then
Text06
Text02
Text07
Text03
Text08
Text04
Text09
Text05
Text10



Technical Overview

- Field Formatting
- HTML Forms
- Sorting
- Deleting Records
- Required Fields
- HTML Lists from Database Records
- HTML Example - Search Page
- HTML Example - Results Page
- Your Structure Information

Field Formatting

	Tag Format	Tag Display	Notes
Alpha	· !!_[Database]Field01_!! · !!_[Database]Field01;URL_!! · !!_[Database]Field01;URL FRAME_!!	· normal · will format field as URL using HREF tag · will format field as URL	

	· !!_[Database]Field01;EMAIL_!! · !!_[Database]Field01;PICTURE_!! · !!_[Database]Field01;PICTURE h=50 w=50_!!	using HREF tag Target Frame defined. · will format field with mailto tag · will format field as IMG SRC pointing to picture referenced in field · last paramter allows you to specify the height and width of the picture .	
Real	· !!_ [Database]Number1_!! · !!_ [Database]Number1;$_!!	· normal · $###,###,##0.00	
Text	· !!_ [Database]Text1_!!	· normal	
Picture	· !!_ [Database]Picture1_!!	· normal	· Automatically inserts width and height tags · Converts automatically to JPG
Date	· !!_ [Database]Date1_!! · !!_ [Database]Date1;1_!! · !!_ [Database]Date1;2_!! · !!_ [Database]Date1;3_!! · !!_ [Database]Date1;4_!!	· 1/3/92 · 1/3/92 · Mon, Feb 11, 1990 · Monday, February 11, 1990 · 01/03/1991	·
Boolean	· !!_ [Database]Boolean01_!! · !!_ [Database]Boolean01;YN_!! · !! _[Database]Boolean01;X_!! · !!_ [Database]Boolean01,_!! · !!_ [Database]Boolean01;CR_!! · !!_ [Database]Boolean01;BR_!! · !!_ [Database]Boolean01;T_!! · !!_ [Database]Boolean01;F_!!	· displays Boolean FieldName · Display Yes or No · Displays "X" if true, blank if false · displays FieldName and comma · Displays FieldName+return, blank if empty · Displays FieldName+ , blank if empty	· When referring to the Boolean field on a form that is submitted, you must use the ";T" and ";F" option, so that the correct value can be saved. Example: · Children?<INPUT TYPE="radio" NAME="!!_ [File]Field;_!!" VALUE="!!_ [File]Field;T_!!" CHECKED>Yes <INPUT TYPE="radio" NAME="!!_ [File]Field;_!!" VALUE="!!_ [File]Field;F_!!">No
Time	· !!_ [Database]Time1_!! · !!_ [Database]Time1;1_!! · !!_ [Database]Time1;2_!! · !!_ [Database]Time1;3_!! · !!_ [Database]Time1;4_!! · !!_ [Database]Time1;5_!!	· HH:MM:SS · HH:MM:SS · HH:MM · hour min sec · hour min · H:MM AM/PM	·

HTML Forms

Function	Post Action	Required Field Names (can be hidden)	Sample Field Values
· Search Form	· *ws4d-db-query	· Database · SortBy · Page · LinkField · Results · Results-Table · Results-1-Record	· Inventory · !!_[Inventory]Stock Number_!! · 0 (always should be 0) · !!_[Inventory]Item_Descr iption_!! · inventory-results.html · inventory-results.table · inventory-results(R).html for Modifying form, use a (W) instead of (R)
· Results Form	· *ws4d-database	· Database · Page · Record · <Insert Navigation Here> · <Insert Results Here> · <Insert Search Here>	· Inventory · 0 (always should be 0) · 0 (always should be 0) · This tag will insert the record navigation buttons and information · This tag will insert the **Results-Table** that is defined on the search form. · This tag will insert the search criteria in sentence form.
· Add/Modify	· *ws4d-db-query-Mod1	· Database · success · failure · recordnumber	· Inventory · success.html · failure.html · -1 (always should be -1)

Sorting

A field named "SortBy" will contain the field to be sorted, the value will be the field to be sorted (e.g.!!_[File]Field_!!). Only sort on fields that are indexed, any field in your structure that is in **boldface** is indexed and can be sorted on.

· !!_[Database]Field_!!	· Sorts Ascending
· !!_[Database]Field;A_!! · !!_[Database]Field;1_!!	· Sorts Ascending
· !!_[Database]Field;Z_!! · !!_[Database]Field;9_!!	· Sorts Descending

Deleting Records

Insert a !!_Delete_!! as the link HTML within a IMG SRC. The tag will automatically be created for you. This tag can be used with a .Table (listing of records), or can be used in the record modification screen. Look in your forms folder for example GIF files.

```
<A HREF="!!_Delete_!!"><IMG SRC="forms/trashicon.gif"
ALT="Trash Icon" WIDTH=12 HEIGHT=12 X-SAS-UseImageWidth
X-SAS-UseImageHeight BORDER=0 ALIGN=middle>
```

Using Keywords for Fast Searching

Any Text or Alphanumeric field can be indexed by 4D. Each word that is in the field can quickly be searched. If the field contains the text “Apple PowerMac 9500”, you can do a keyword fast search on the words “Apple” or “PowerMac” or “9500”. Here is how this works.

This example would index the contents of **[Database]Field02**

```
<INPUT TYPE="hidden" NAME="Keywords" VALUE="[Database]Field02">
```

This example would index the contents of **[Database]Field02, [Database]Field03, [Database]Text1,**

```
<INPUT TYPE="hidden" NAME="Keywords" VALUE="[Database]Field02,
[Database]Field02, [Database]Text1 ">
```

Here is how to perform the search on keywords:

```
<INPUT TYPE="hidden" NAME="Condition" VALUE="is"><INPUT TYPE="hidden"
NAME="!!_[Database]Name_!!" VALUE="Support"><INPUT TYPE="hidden"
NAME="Condition" VALUE="Keyword Search"><INPUT TYPE="text"
 NAME="!!_[Database]Field01_!!" VALUE="" SIZE=28>
```

Note Keyword searching is provided for in the Support Example that came with Web Server 4D

Making Fields Required While Adding Records

Any field can be made required by adding a "-Req" after the field name, example:

!!_[Inventory]Stock_Number-Req_!!

Above, the field named "Stock_Number" in file "Inventory" is a required field. If a record is added and this field is left blank, a default message will appear that looks like this:

Missing Fields!

The following fields need to be filled in:

•Stock_Number

Press the back button, fill in missing fields and resubmit form.

The above message can be an external HTML file. Create a HTML file and save it in the forms field. Next, in your Add Record HTML form, create an invisible field named "missing" and enter the name of the HTML page in the form field. Insert a tag named <missing>, where you want the missing data to be listed.

Web Server 4D HTML Tags

Web Server 4D adds <HTML TAGS> to the HTML programming language that you can use in your documents. These tags are only supported by Web Server 4D.

<!-- #include file=	**Inserts the document specified in the tag. See Server Side includes.**
<!--#exec virtual	**Inserts CGI Results in a page, can also grab text from another URL.**
<AUTHENTICATE_COUNT>	**Inserts the total number ofaccesses for a specific user (available only for folders/files that are protected with Realm Security).**
<AUTHENTICATE_HISTORY>	**Inserts the log on history for specific user. available only for folders/files that are protected with Realm Security).**
<AUTHENTICATE_LAST>	**Inserts the last date and time a user logged in (available only for folders/files that are protected with Realm Security).**
<AUTHENTICATE_USER>	**Inserts the user name (available only for folders/files that are protected with Realm Security).**
<BROWSER STATS>	See Web Server 4D Built-in Functions
<BROWSER>	**Inserts the Browser the client is using**
<COOKIE>	**The HTTP Cookie value assigned from the server**
<CURRENT CONNECTS>	**The number of users connected to the server**
<CURRENT TEMPERATURE>	**If you are using the Weather Agent, this will insert the current temperature.**
<DATA MOVED>	**The amount of data that has been sent from the server**
<DATE1> o r <DATE_SHORT>	**Inserts current date as 04/05/95**
<DATE2> or <DATE_LONG>	**Inserts current date as Tuesday, April 5, 1995**
<DATE_ABBREVIATED>	**Inserts current date as** Mon, Feb 11, 1990
<DATE_SHORT2>	**Inserts current date as** 01 / 03 / 1991
<DOC LAST MODIFIED SHORT>	**Inserts the Date the document was last modified**
<DOC LAST MODIFIED>	**Inserts the Date & Time the document was last modified**
<DOMAIN STATS>	**See Web Server 4D Built-in Functions**
<FREE MEMORY>	**Amount of Free Memory available to WS4D**
<HIGH CONNECTS>	**The highest number of connects for the day**
<HOST>	**Requested Host - used for multiple home pages from one IP address.**
<NETSCAPE PERCENT>	**Inserts the percentage of browsers visiting your server that are using NetScape (same as Mozilla)**
<PAGE COUNT USER>	**Inserts the number of visits for this user to this page**
<PAGE COUNT>	**Inserts the number of visits for this page**
<REFERER2>	**Inserts search engine or link that the user was previously visiting before coming to your page (the raw value)**
<REFERER>	**Inserts search engine or link that the user was previously visiting before coming to your page (stripped for inside and parsed for Search Engines)**
<SERVER HITS>	**Inserts the number of server hits or connections**
<SERVER LISTENS>	**The number of listens setup for the server**

<SERVER NAME>	**Inserts the Server name.**
<SERVER STATS2>	**See Web Server 4D Built-in Functions**
<SERVER STATS>	**See Web Server 4D Built-in Functions**
<TIME>	**Inserts Time as 5:55PM**
<TIME_LONG>	**Inserts current time as** 1 hour 20 minutes 14 seconds
<TIME_SHORT>	**Inserts current time as** 3:15 PM
<TOP 10 MODIFIED PAGES>	**This inserts the top 10 modified pages.**
<TOTAL PAGES BUFFERED>	**Number of pages added in Web Page Setup**
<TOTAL USERS VISITING SERVER>	**The number of individual users visiting your server**
<UP SINCE DATE>	**Inserts Date & Time since server has been up**
<URL>	**Inserts the requested URL.**
<USER FIRST VISIT>	**Inserts the Date & Time that the user first visited any page on our server**
<USER IP>	**Inserts the user IP Address**
<USER LAST VISIT>	**Inserts the Date & Time that this user last visited this page**
<USER NAME>	**Inserts DNS Name (if available)**
<USER PAGE FIRST VISIT>	**Inserts the Date & Time that this user first visited this page**
<USER PAGE LAST VISIT>	**Inserts the Date & Time that the user last visited the specific page**
<USER VISITS>	**Inserts the number of visits this user has visited our server**
<VIRTUAL DOMAINS>	**Inserts all the Virtual domains served by this server.**
<WS4D S/N>	**Inserts the WS4D S/N.**
<WS4D VERSION>	**Version of WS4D**

Note If you are using the WS 4D HTML Enhancements, you must Add your page in the Cache OR your page must end in with .WS4D file extension

Web Server 4D Built-In Functions

Web Server 4D contains built in functions for tracking and statistics. These tags are inserted into your HTML documents as html tags and they will generate statistics on the fly, the tags are:

- <Server Stats>
- <Server Stats2>
- <Browser Stats>
- <Domain Stats>
- <Recent Users>
- TodaysUsers

SERVER STATS

Server Stats returns in real time the statistics for this server. If the client supports tables, the information will be returned in table format.

Page	New Hits	Repeat Hits
Bad URL	3	2
Browser Stats	10	3
Domain Stats	8	3
Server Stats	6	1
Server Stats2	11	1
Tag Demo	15	18
*ADDDEMO	6	2
*FINDDEMO	7	10
4dws/contact.html	4	1
4dws/custom.html	4	1
4dws/demo.html	19	7
4dws/developer.html	10	7

SERVER STATS2

Server Stats2 returns in real time all the pages that you have visited on this server. This is based on the User IP Address, so it will not be accurate if a client goes through a firewall or

America Online. If the client supports tables, the information will be returned in table format.

Page	Visits	First Visit	Last Visit
home.html	95	11/2/95 at 10:37 AM	11/24/95 at 7:09 PM
Bad URL	59	11/2/95 at 2:12 PM	11/19/95 at 3:34 PM
4DWS/gifs/poweredby.gif	47	11/4/95 at 4:18 PM	11/10/95 at 9:06 PM
Browser Stats	42	11/4/95 at 4:40 PM	11/22/95 at 9:30 PM
4DWS/gifs/3Dlogo.gif	39	11/4/95 at 4:18 PM	11/10/95 at 9:06 PM
Tag Demo	24	11/4/95 at 4:41 PM	11/22/95 at 9:31 PM
4dws/gifs/underconstruct.gif	22	11/4/95 at 4:39 PM	11/7/95 at 10:50 PM
Server Stats	19	11/4/95 at 4:41 PM	11/22/95 at 9:31 PM
4dws/screens/index.html	17	11/2/95 at 2:11 PM	11/25/95 at 7:19 AM
gifs/new.gif	16	11/7/95 at 10:51 PM	11/10/95 at 9:06 PM
3Dlogo.gif	16	11/2/95 at 10:38 AM	11/12/95 at 7:34 AM
maps.html	15	11/6/95 at 7:48 AM	11/21/95 at 10:30 AM
4dws/ordering.html	15	11/2/95 at 2:13 PM	11/21/95 at 11:35 AM

BROWSER STATS

Browser Stats returns in real time all the Browser types that have visited your server. If the client supports tables, the information will be returned in table format.

Browser Type	Percentage
Mozilla/1.1N (Windows; I; 16bit)	17.00 %
Mozilla/1.1N (Macintosh; I; 68K)	13.00 %
Mozilla/1.12(Macintosh; I; 68K)	9.00 %
Mozilla/2.0b1 (Macintosh; I; 68K)	7.00 %
Mozilla/1.2N (Windows; I; 16bit)	6.00 %
Mozilla/1.12(Macintosh; I; PPC)	6.00 %
Mozilla/1.1N (Macintosh; I; 68K) via proxy gateway CERN-HTTPD/3.0 libwww/2.17	6.00 %
Mozilla/1.1N (Macintosh; I; PPC)	5.00 %
Mozilla/2.0b2 (Macintosh; I; PPC)	4.00 %
Mozilla/1.22 (Windows; I; 32bit)	3.00 %
Mozilla/1.1N (Macintosh; I; 68K) via proxy gateway CERN-HTTPD/3.0pre6 libwww/	3.00 %
Mozilla/2.0b1 (Macintosh; I; PPC)	3.00 %

Mozilla/1.22 (Windows; I; 16bit)	3.00 %

DOMAIN STATS

Domain Stats returns in real time all the Browser types that have visited your server. If the client supports tables, the information will be returned in table format.

Domain	Percentage
Unresolved	34.00 %
com	25.00 %
net	14.00 %
edu	7.00 %
au	2.00 %
it	2.00 %
se	2.00 %
mil	2.00 %
jp	1.00 %

RECENT USERS

Recent Users returns in real time the Recent users visiting this server. Name or IP Address. The third column is the number of seconds it took to send the file The last column is the file that was sent. If there is a Referer, a line will be listed above showing you how this user found the server (which search engine or link was used to find your site).

If the Seconds to Send appear in brackets - it indicates that the client already had a current copy of the file cached locally and Web Server did not need to resend the requested file - this speeds up serving of files even when reloading pages!

If a (CK) appears next to the IP Address or DNS Name, this indicates that this user has already visited our server and Netscape Cookies are being used to track this user counts.

```
Visit  User                    Seconds To Send  File Sent
-----------------------------------------------------------------
#4     204.137.245.120 (CK)                [4]    index.html
       199.106.6.97  ACGI Request (CK)      11.82 interaction.acgi
       199.106.6.97  ACGI Request (CK)      6.72  interaction.acgi
#1     asg6.colorado.edu (CK)              [3.53] 4dws/integrate.html
       199.106.6.97  ACGI Request (CK)      5.77  interaction.acgi
```

```
       Ref: http://asg6.colorado.edu/httpd/4dlinks.html
#9     asg6.colorado.edu                    [5.15] index.html
       Ref: yahoo.com
#1     mercure.math.u-bordeaux.fr           [30.95]index.html
#11    199.174.148.28 (CK)                   7.25  4dws/ordering.html
#10    199.174.148.28 (CK)                   4.13  4dws/custom.html
#6     et.ix.de                             [31.13]index.html
#1     ra-data.telepost.no (CK)              13.3  4dws/demo.html
#2     grail1804.nando.net                  [24.95]index.html
#9     199.174.148.28 (CK)                   15.42 4dws/server.html
       Ref: webcrawler.com
#1     grail1804.nando.net                   8     4dws/developer.html
#8     199.174.148.28 (CK)                   8.23  4dws/ServerStats2.html
#7     199.174.148.28 (CK)                   6.27  4dws/developer.html
#6     199.174.148.28 (CK)                   5     4dws/questions.html
#5     199.174.148.28 (CK)                  [10.1] index.html
#4     199.174.148.28 (CK)                   6.42  4dws/dev-download.html
#3     199.174.148.28 (CK)                  [13.48]index.html
#1     stimpy.jemm.com (CK)                  15.95 4dws/demo.html
       206.230.226.4  ACGI Request (CK)      2.5   mapserve.acgi
#40    206.230.226.4                        [5.6]  index.html
#2     199.174.148.28 (CK)                   10.83 4dws/email-test.html
#1     199.174.148.28 (CK)                   81.13 4dws/questions.html
#38    140.142.13.196                       [9.87] index.html
       204.137.245.120  ACGI Request (CK)    4.7   mapserve.acgi
```

TodaysUsers

Every time that someone visits your Web Server 4D server, a record is created or updated so that statistical tracking can take place. This demo
will query the file that contains these users and build a table on the fly for all the users that have visited your server today. As the table is
being sent to the browser, the routine will figure out the percentages for NetScape, Microsoft and other browsers - on the fly!

This new feature is not a <WS4D Tag>, but rather a built-in feature, here is how to access it:

http://www.yourserver.com/UsersToday
http://www.yourserver.com/UsersToday?hide

Realm security is available, so that you can password protect this file. Just enter "UsersToday" in the Realm match.

177 Users Visiting This Web Server 4D Server
December 17, 1996 - 3:56 PM

Show Browser Statistics
Show O/S Statistics
Show Platform Statistics

User Name/IP	First Visit	Browser	Cookie	1St Referer
cache.euronet.nl	32 days	Mozilla/3.0 (Macintosh;PPC) via Squid Cacheversion 1.0.17	Yes	Yahoo.com
mjwmac.larc.nasa.gov	Today	Mozilla/3.01 (Macintosh; I;PPC)	Yes	
st16.ie-online.it	Today	Mozilla/3.01 (Macintosh; I;68K)		http://applenet.apple.com/
Mike.mdg.com	Today	Mozilla/3.01 (Macintosh; I;68K)	Yes	Http://altavista.com/

Browser Breakdown
NetScape = 88.70 %
Microsoft = 6.78 %
Other = 4.52 %

O/S Breakdown
Macintosh = 67.23 %
Windows = 26.55 %
Other = 6.21 %

Platform Breakdown
Mac 68K = 12.43 %
Mac PPC = 53.11 %
Win 95 = 13.56 %
Win = 12.99 %
Other = 7.91 %

Using CGI's with Web Server 4D

Note Currently only the MacOS version of Web Server 4D is can run CGI's. We expect a future version of WS4D for NT to support CGI's directly.

Configuring Web Server 4D

Based on the default suffix mapping in Web Server 4D any CGI or ACGI should work without any customization. It is recommended that you create a folder name cgi and place this folder in the same folder as your Web Server 4D application.

Drop any CGI/ACGI application in this folder and they will automatically be available from within the application. The file must end in either .acgi or .cgi in order to be recognized, unless you create a specific Action Application OR change the suffix mapping to match your application.

When an incoming connection requests a CGI to run. Web Server 4D will automatically launch the CGI application (if it already isn't running) and then pass the information to the CGI, waiting for the response. After the response is received, it is passed back to the client. All this happens via AppleEvents and it pretty fast.

Each CGI/ACGI application has different directions for use, so make sure that you read the specific directions for each CGI.

Note For a complete list of CGI's that have been tested with Web Server 4D, visit http://www.mdg.com/4dws/cgi.html

Using Interaction/IP with Web Server 4D

Note For more information on Interaction, visit http://interaction.in-progress.com

Interaction/IP is a Discussing and Forum ACGI that works great with Web Server 4D.

Interaction/IP™ provides your web server with advanced dynamic services that support interpersonal communication and make your website into a social place. As early as in

1994 the software provided one of the first threaded conference systems on the Web so visitors could browse or post messages from their web browser. The Threaded Discussion Forum is still a core service of Interaction. The application also integrates highly customizable Chat Rooms, and other services. Interaction is highly extendable with services such as a Shopping Cart feature so you can tailor a Shop on the web where customers can pick up various products as they browse your pages and order in the end. The software has a built-in text
editor particularly suited for markup, as well as support for general site maintenance of documents with sophisticated server-side includes. You can download Interaction from this URL:

http://www.ifi.uio.no/~terjen/interaction/

Here is information on how you would set up this application.

Using Interaction is very easy to use. After downloading Interaction do the following:

1) Place a copy of the Interaction folder on your Web Server Hard disk (do not put it in your WS4D folder, but at the main level)

2) Create an Alias to the Interaction application

3) Place the Alias into your Web Server 4D folder

4) remove the "alias" portion of the filename so that the name is just Interaction

5) Goto the Web Server 4D Setup. Select Suffix mapping.

6) Add a new Suffix Map, select ACGI in the action field, click cancel when asked for the file.

7) Enter a * in the suffix field

8) Type a "?" in the Type field and select the Interaction alias that is in your WS4D folder

9) enter text plain in the MIME field. 10) your suffix entry should look like this:

ACGI * APPL wIIP text/plain INTERACTION

If you do not want to go through all this setup, you could rename the Interaction alias to Interaction.acgi and not have to perform steps 5-10.

Using MapServe with Web Server 4D

MapServe is a image mapping CGI program, it is a shareware program written by Kelly Campbell (please pay your shareware fee). Web Server 4D built-in image mapping is limited to rectangles. MapServe can serve rectangles, circles and polygons.

http://www.spub.ksu.edu/other/machttp_tools/mapserve/

Using MapServe with Web Server 4D is easy. Place a copy of MapServe.acgi in your CGI folder. You may want to place an alias of MapServe in the same folder as Web Server 4D.

After copying the files, you would access MapServe, by typing in a URL like this one:

http://www.mdg.com/cgi/MapServe/Default.html

Please read the MapServe documentation for use and operations.

For More Information

For additional information on CGI/ACGI Applications, we recommend the following book:

“Web Server Construction Kit For Macintosh” by Stewart Buskirk by Hayden.

Not only does it come with a CD ROM with lots of CGI applications that you can use with Web Server 4D, it is a must read for any Macintosh Web Master.

Administering Web Server 4D

Server Connections

The HyperText Transfer Protocol (HTTP) defines how a Web server handles connections. Unlike File Transfer Protocol (FTP), where a FTP client opens a connection with a server, opens another connection to transfer data and holds both connections open for the whole session, HTTP opens a connection, only for as long as it's needed to transfer the requested data. The connection is then closed immediately.

If you have 3 graphic images on your HTML page, the client will open 1 connection to receive the page and 3 additional connections for each graphic. So the one visit will create 4 server hits or connections. Most other Web Servers can only report this number, but with Web Server 4D, the tracking capability is much more extensive.

TroubleShooting

Memory and Number of Listens

Each Listen takes approximately 150K of memory. Make sure that you increase the amount of memory WS 4D requires if you have many listens. The formula is 5400K + (NumListens X 150K).

Unresolved Domain Names

Some Internet sites are not configured to return the DNS name when asked. These sites will be considered unresolved in the Domain Statistics window.

Controlling Data File Size

If you want to control the size of the WS4D data file, you might disable Page Tracking in the WS4D Setup screen. This file will create a record for each page visit for each user, if you do not need this level of tracking, turn off this feature and your data file will remain smaller. You may need to run the compact option in 4D Tools, to compress your existing data file.

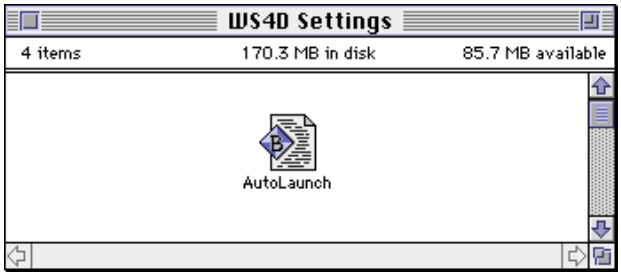
Automatically running Applications

Web Server 4D (version 1.0fc1 and greater) has the ability to automatically run one externalapplication every so many hours. If you want to run a log analysis program every day or possible run a backup application every day, you can now have WS4D launch this application automatically.

Example - Running Analog every 60 minutes

Analog will analyze the log file that is generated by Web Server 4D. Our server's log file is analyzed every 60 minutes by Analog - check it out, especially notice the date, it will never be more then 60- minutes old!)

Create a Folder Named WS4D Settings and place it in the same folder as your Web Server 4D application. Create a TEXT file named AutoLauch. AutoLaunch document contains two lines:




```
01:00:00
MAG^
```

First line is the interval to launch program - HH:MM:00. The example above indicates 1 hour. The second line is the CREATOR CODE of the application. Autolaunch is MAG^. ServerStats is SSTA. You can use a program such as FileTyper or ResEdit to obtain the Creator Code.

The application will launch in the background. Both ServerStats and Analog can be configured toautomatically quit after they are completed.

Serving Different Pages Based on TCP Port Requested

Web Server 4D has the ability to serve different pages based on the requested TCP Port. In the virtual domain area, enter the port number (e.g. 8080) instead of the domain name. Select the **root** folder for this "domain" and you are done!

Appendix A: 4D Tools

The 4D Tools utility for 4th DIMENSION is used to analyze and repair damage to a database, and to compact database files.

4D Tools is included in the Web Server 4D Installer. Run the Installer and select the Custom option and select to install 4D Tools. 4D Tools is also available at the MDG web site at http://www.mdg.com/4dws/tools.html

To use 4D Tools:

1. Start 4D Tools from the Finder.
2. An open-file dialog box is displayed. Select the database on which you want to run 4D Tools.
3. Select one of the options described below.

Checking and Recovering Database Files

You choose the Check & Recover menu item to analyze and repair damage in database files. 4D Tools displays the following dialog box:

There are three options offered by Check & Recover:

• Check only and create a log: Selecting this option instructs 4D Tools to analyze the selected database, looking for damage. A text file called "Journal" is created on disk. The file contains information describing any damage that was found. The database is not modified.

• Check and fix damage: Selecting this option instructs 4D Tools to analyze the database and repair any damage that is found. A text file called "Journal" is created on disk. The file contains information describing any damage that was found.

• Recover by tags, duplicating the data file: Selecting this option instructs 4D Tools to recover records using "tags." Tags are markers stored with each record when it is created. This option should be used only when a data file has been badly damaged and could not be recovered with the "Check and fix damage" option. A new data file is created. The new

data file is called "database.temp." The ".temp" is appended to the name to distinguish the new data file. You must have enough space on disk for the new data file (usually about the same amount as the original data file). A data file that has been recovered by tags may contain records that were deleted.

To analyze and recover data files:

1. Choose Check & Recover from the Utilities
2. Select the option or the operation you wish to perform.
3. Click OK to perform the selected operation.

Compacting Database Files

4D Tools can be used to compact database files. As you use a database, the data file develops "holes" when records are modified and deleted. The holes are created when information no longer fits in the same space it used to, or when information is deleted. 4D automatically reuses holes when something can fit into a hole.

To compact the files:

1. First make sure you have enough room on your disk for a new copy of the database. The process creates new copies of both files.

2. Choose Compact from the Utilities menu. A create-file dialog box is displayed. 4D Tools suggests a name for the new data file that is the same as the original but with the number 2 appended to the name. Enter a name for the new database, or leave the default name in the dialog box.

3. Click Save. 4D Tools creates a 2nd compacted data file, you can throw away your first data file and the next time you open Web Server 4D, 4D will ask you the location of the data file, select this new data file.

Appendix B: Restoring Data

Web Server 4D has a built in backup and restore feature. This feature (when enabled) will backup important files to a backup folder and if you ever need to restore or install from scratch, you can quickly restore.

When the checkbox named **Backup Data** is checked, every night WS4D will backup your data files to the following location:

/WS4D Settings/Backup/

If you ever need to re-install WS4D from scratch or create a new data file and the Backup Folder is present, WS4D will ask if you want to restore and then automatically restore.

Appendix C: QuickDNS Pro and Virtual Hosting

The following example explains how you configure two virtual domains using QuickDNS Pro and Web Server 4D. You should read the Web Server 4D documentation before attempting to set up a virtual domain with QuickDNS Pro.

Note	These directions are for using a DNS program on MacOS, but the directions could be used for other DNS programs even on Windows NT.

The example is based on the following information:

- The original domain is called yourwebserver.com
- The host name for the "original" web server is www.yourwebserver.com
- The virtual domains are called companyX.com and companyY.com
- The host names for the virtual web servers are www.companyX.com and www.companyY.com
- The names of the directories created for the Web server are companyX and companyY

.

Note: For your own setup you will of course use different names.

Setting up Web Server 4D For Virtual Hosts

Web Server 4D supports Virtual Domains handling both web and email traffic. Please read the documentation that comes with Web Server 4D for directions.

Setting up QuickDNS Pro

For each virtual domain you will have to create one domain data file. The virtual domains created in this example are minimal, i.e. they contain only the necessary data to provide service for a virtual Web server.

1. **Create a new virtual domain**.

   You create a virtual domain just like an ordinary domain. Start the QuickDNS Pro Admin application and select New from the File menu. If you have already created a virtual domain, you should skip to step 5 below.

2. **Enter the domain information in the Domain Information dialog box.**

The data in the domain information window should look identical to the data in the original domain, except the Name field should contain the name of the virtual domain (e.g. companyX.com). The fields Primary and Hostmaster should be exactly the same as in the original domain.

3. **Enter the domain resource records**

Create NS records and MX records which are identical to the ones in the original domain Create one CNAME record with the hostname www and the canonical name of the "original" Web server (e.g. www.yourwebserver.com).

4. **Save and close the domain window**

When you have finished entering the domain data you should save the domain in the Primary Data folder. You have now created a virtual domain.

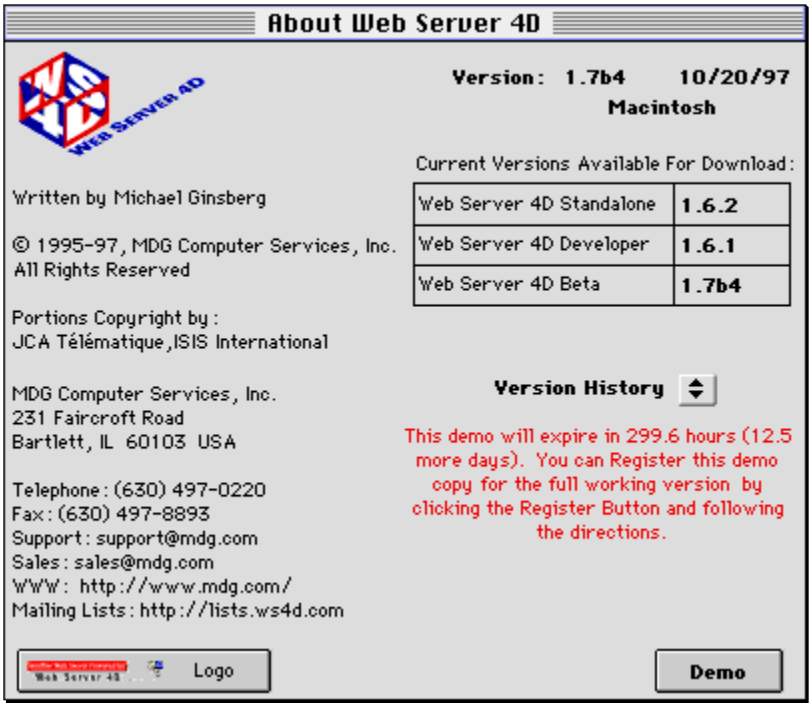
5. **Create the second virtual domain**

Duplicate the first virtual domain, and open the copied domain. Open the Domain Information window and change the Name field to the name of the second virtual domain (e.g. companyY.com). Save and close the domain window. You have now created two virtual domains. Repeat the above process for each additional virtual domain you create.3. Enter the domain resource records Create NS records and MX records which are identical to the ones in the original domain Create one CNAME record with the hostname www and the canonical name of the "original" Web server (e.g. www.yourwebserver.com).

Note You can also duplicate the original domain and delete every resource record except those of types NS and MX.

Appendix D: Version Notifier

Web Server 4D will can automatically notify you when a new version is available directly from MDG Computer Services, inc. To use this feature, is simple. Just select "About Web Server 4D" and a dialog box will be displayed with the current shipping versions of Web Server 4D.



Be sure to subscribe to the Web Server 4D Announce Mailing List, so that you will be notified via Email when new versions of Web Server 4D become available.

Note Your server must be on the Internet for this feature to work. When you select the about box, a connection is immediately opened to MDG Computer Services, Inc. and a HTML page with the current versions is automatically downloaded.

Contacting MDG

If you have any questions regarding the operation of Web Server 4D, please contact MDG Computer Services, Inc. directly. We prefer that you contact us electronically, since it will give you a chance to explain your problem or question in more detail, most Email is answered within 24 hours.

Join our Web Server 4D Mailing List by visiting http://lists.ws4d.com/ or http://www.mdg.com/4dws/mailing-lists.html

MDG Computer Services, Inc.
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Email: support@mdg.com
sales@mdg.com

Note **We can only support customers who have purchased Web Server 4D.**

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