



DxR™ nursing



STUDENT USER MANUAL

INSTRUCTOR MANUAL

TECHNICAL APPENDIX

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DxRNv1.7.4Tech-0610

For use with DxR Nursing version 1.7.4 or later.

Not for use with prior versions of the software.

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Setting Up the DxR Nursing Site

It is beyond the scope of this guide to provide detailed instructions on how to set up and administer a web server. This guide will cover setting up your *DxR Nursing* site. For information about your Web server, we encourage you to read the documentation that accompanies your server software.

System Requirements

- ▶ DxR Nursing has been successfully tested on the following platforms and Web Servers:

Configuration	Perl	Perl Build
Win 2003 & 2008	5.8.8	822

- Windows 2003 Server (IIS 6.0)
- Windows 2008 Server (IIS 7.0)
- Debian GNU/Linux 4.0 or greater (Apache)
- Macintosh OSX Server Version 10.4 or higher (Apache)

If your operating system and Web server are not listed above, you may be able to run DxR Nursing on server configurations meeting these specifications:

- ▶ Web server capable of serving HTML 2.0 or higher and executing Perl 5.8 cgi scripts.
- ▶ Perl 5.8 is required (see supported release information to the left),
- ▶ DB_File Perl Module
- ▶ Your server will need a static IP address.

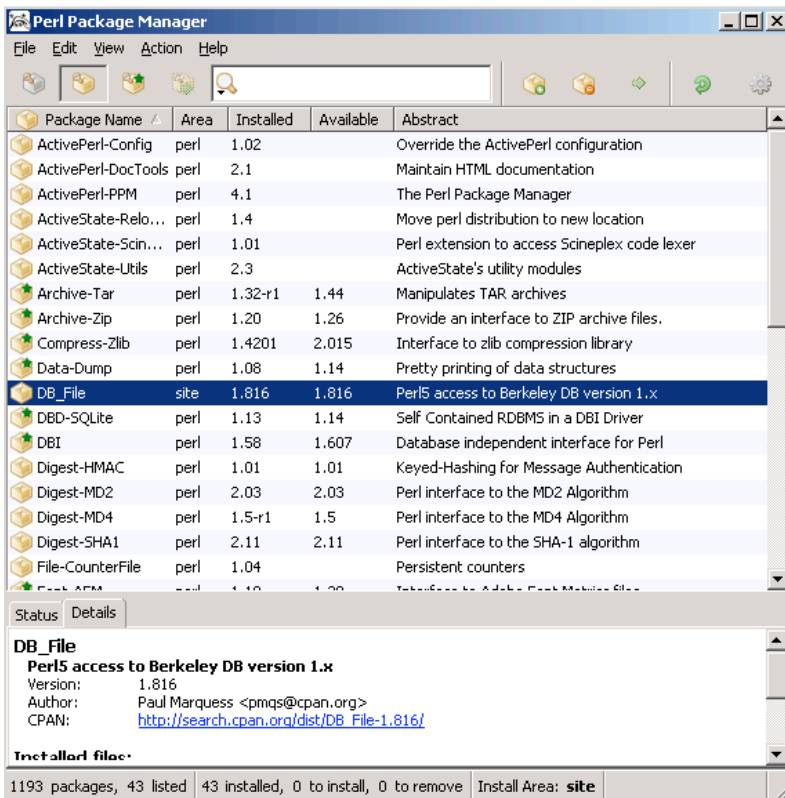
Web Server configuration options

Installing DxR Nursing under IIS

Before proceeding with these instructions, you must have Perl, DB_File, and IIS installed and working properly. For Windows, we recommend:

ActiveState Perl <http://www.activestate.com>

ALERT!
DxR Nursing requires approximately 90 MB of hard drive space on the server. This size is based on a single install of all cases.



For ease of maintenance of the product, it is advisable to install it to a completely different directory than WWWROOT.

Installing the Necessary Perl Modules

For Windows Users:

1. Open the command prompt.
2. Type in the command belows:

```
C:\>cd c:\perl\bin
```

```
C:\Perl\bin>ppm
```

3. In the Perl Package Manager, go to Edit in the upper left and choose Preferences. In the Preferences, click Repositories.

For Name: tcool

For Location: <http://ppm.tcool.org/archives/>

Once the list is refreshed, you should mark the DB_File for installation and then click Run Marked Actions.

4. Exit the Perl Package Manager.

Directory Structure and Installation Process

1. Creating the Directory Structure

Here is a diagram of the required structure:

Full Path Equivalent: X:\FOO\DXRROOT\cgi-bin\DxRSetup

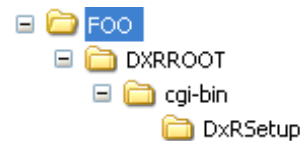
X is the drive on which you are installing the product.

FOO is a 'buffer' folder; it is necessary to enable the setup script to select the Website's root directory properly. You may name it whatever you wish.

DXRROOT will be the root directory of the website. This is the folder that will be listed as the Home Directory in IIS.

cgi-bin will be the CGI folder for the Web site. Do not link this folder to the original cgi-bin in WWWROOT.

DxRSetup (case sensitive) is the directory that will contain the dxrSetup.pl script.



2. Creation and Configuration of IIS Website.

a. Start up the IIS Management Console, and if you are not using the default Web site, use the **Action Menu** to create a new Web site. The wizard will allow you to choose a name, home directory, port, initial permissions, and the IP address to use.

- You can name the site whatever you wish.

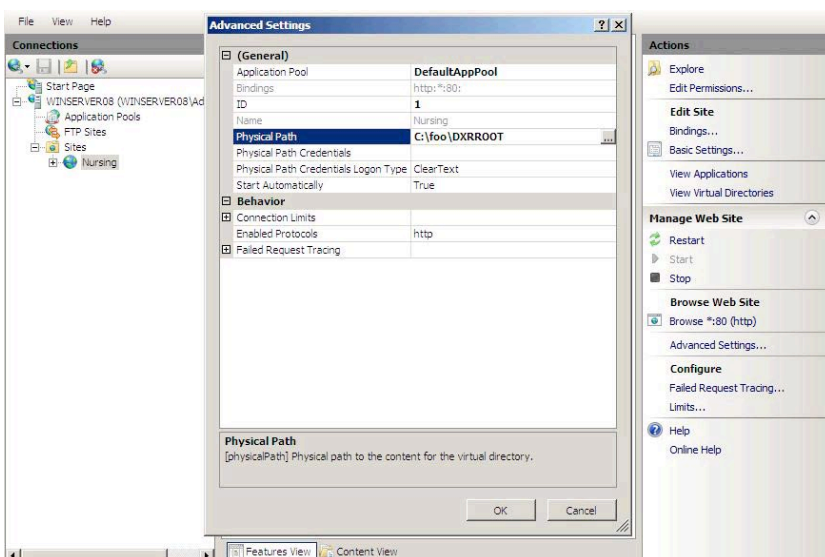
- The Home Directory will be X:\FOO\DXRROOT.

- The default port is 80. You must leave it at 80.

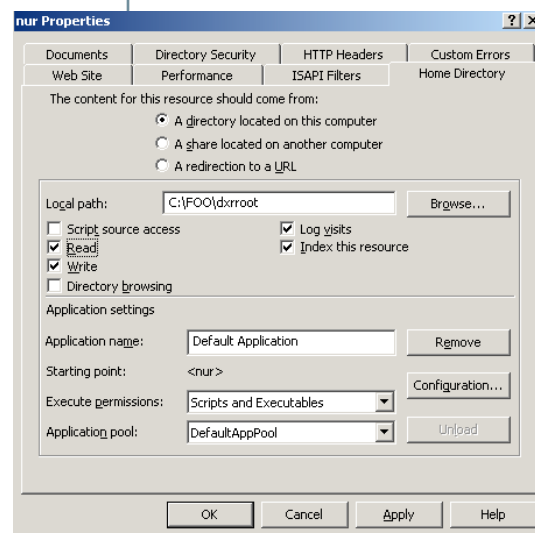
- The initial permissions will be Read.

- The IP address will most likely be the IP address of the machine.

b. Next, right-click on the desired Web site to bring up its context menu, then select **Properties**. Click the **Home Directory** tab. You will see a screen similar to one of the examples you see below:



Selecting a Web site to reveal the Advanced settings menu in Windows 2008 server software



Editing Web site properties in Windows 2003 server software

c. If you created a new directory in step 1, confirm that the Local Path box still has X:\FOO\DXRROOT entered.

d. Make sure that Read is checked.

e. Under Execute Permissions, select Scripts and Executables.

Configuration of IIS Websites

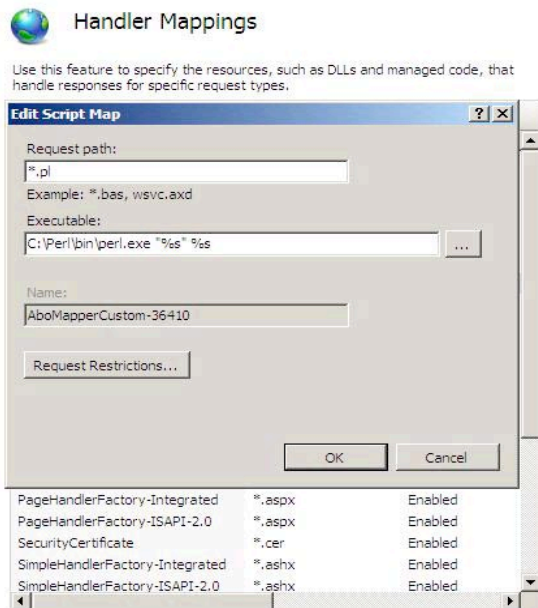
- f. Now click the Configuration button, and then go to the AppMappings tab.
- g. Make sure the pl extension is associated with the file

X\Perl\bin\perl.exe "%s" %s

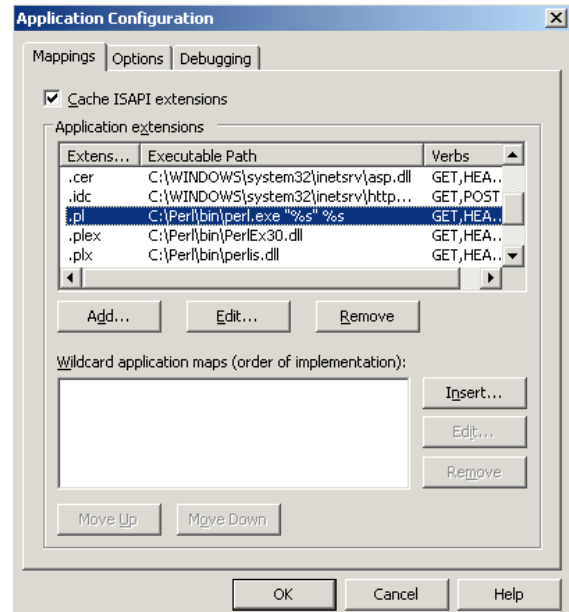
This should be the default when installing Perl 5.8.8, build 822.

- h. Make sure the script Engine checkbox is CHECKED. The end result should look like one of these examples:

Handler mappings as displayed in **Windows 2008** server software



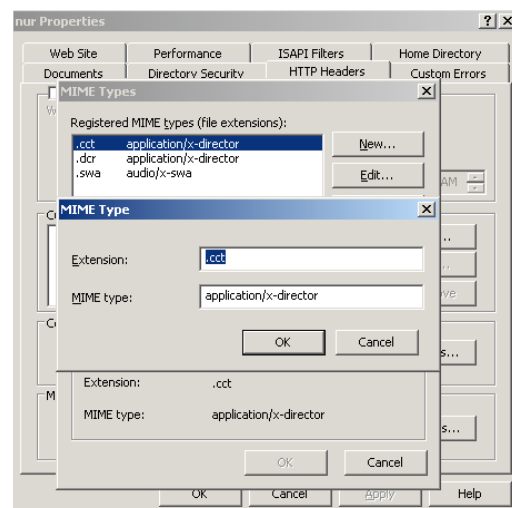
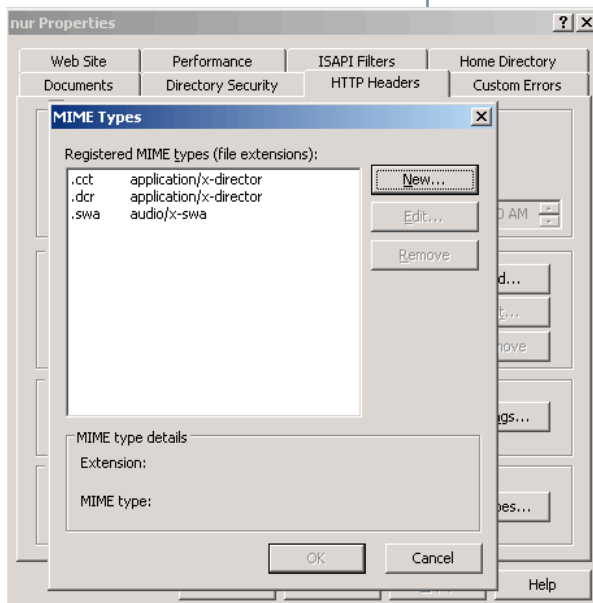
Mappings as displayed in **Windows 2003** server software



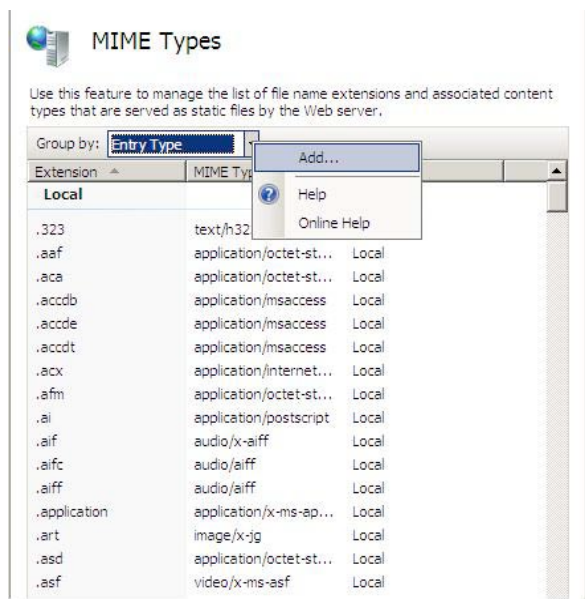
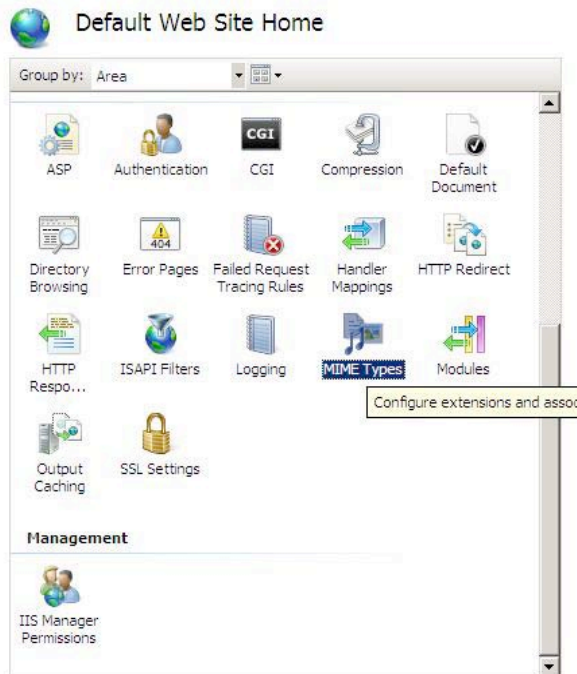
- i. Once you have set up the **App Mappings**, click **OK** and go to the **Directory Security** tab. You will want to make sure that **Allow Anonymous Access** and **Windows NT Challenge/Response** are checked.
- j. Next, choose the **HTTP Headers** tab. Under the **MIME Types** section, add the following file extensions:

.cct	application/x-director
.dcr	application/x-director
.swa	audio/x-swa

In **Windows 2003** server software, this is what you will see when you click the **MIME Types** tab to add the needed file extensions.

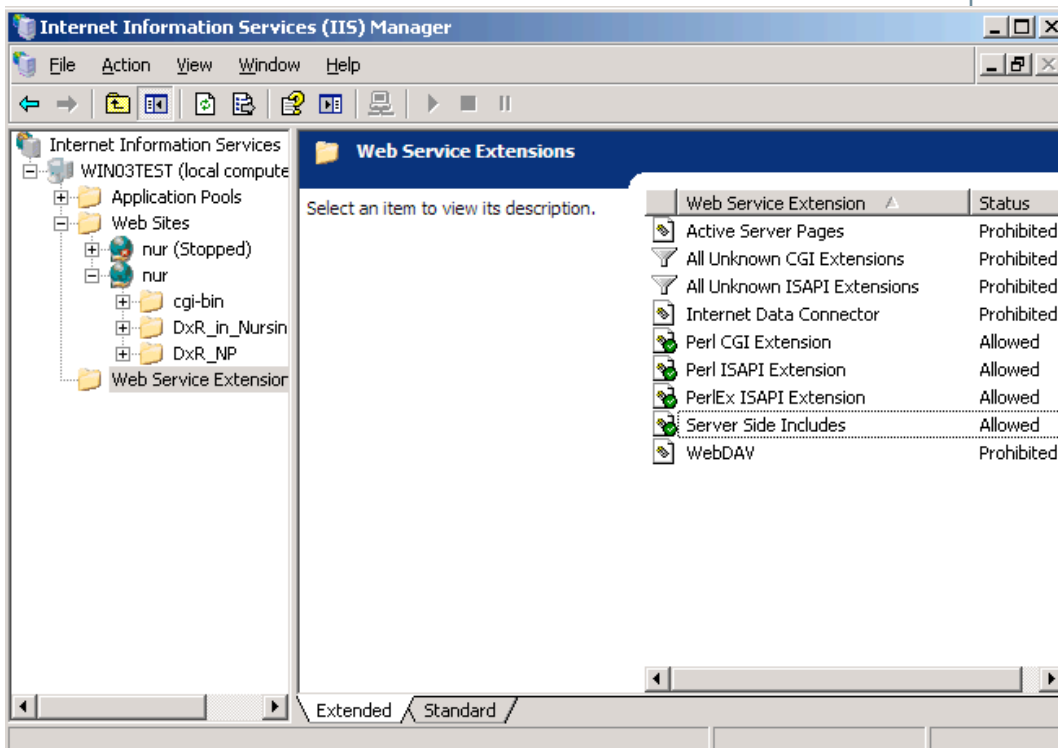


Configuration of IIS Websites



In Windows 2008 server software, you select the MIME Types icon in the Web Site home to reveal the MIME Types menu. This is where you can add the necessary extensions listed above.

- k. Once you have confirmed the above MIME types, click OK to get out of the **Authentication Methods** screen, and then click OK again to get back to IIS proper. Right click the Web site and select Start, which will allow you to continue to the next step.
- l. Lastly, click on the Web Server Extension at the bottom of the tree and allow **Perl CGI Extensions**.



NOTE

For more information about installation of case directories, see page 12 of this technical appendix.

IMPORTANT!

Remember to provide the Web address for the DxR Nursing Directory Utility to the academic person at your institution who administers use of the DxR Nursing software. Without this information, the academic users will not be able to access the software.

4. Unpacking the product .ZIP file

On the CD, you will find a large .ZIP file. It will be called:

DxR_In_Nursing_Practice.zip.

This file contains the core product files. You must extract the contents of the file to your **DXRROOT** folder.

5. Placing the dxrSetup.pl file into the DxRSetup folder.

The dxrSetup.pl file is the installer script that sets up the cases included with the product. It must be located within the DxR Setup folder.

It can be found within the large .zip file you unzipped in the previous step. Move the file from its current location to the DxRSetup folder.

After you have placed the dxrSetup.pl file, right-click it and choose **Properties**. Double-check to make sure that **Read Only** is not checked.

6. Running the dxrSetup.pl file to install the product.

To run the setup script, you will need to type the following address into a web browser:

http://(server address)/cgi-bin/DxRSetup/dxrSetup.pl

If everything is set up properly, you will see a welcome screen with instructions for installing the product cases. (See Note.)

7. Securing your DxRSetup Directory.

Most web browsers will cache the user names and passwords you type in. To be absolutely certain that no one gains unauthorized access to the setup program when you are done with them, quit your browser completely. This will ensure that the next time your browser is started, any attempt to access the secured parts of the site will result in a challenge for the user name and password.

- a. You will need to create a new user. Go to Start>Programs>NT Administrative Tools>User Manager for Domains. Create a user of any name and description.
- b. Now, use the NT Explorer to navigate to your DxRSetup directory. This is usually located in X:\FOO\DXRROOT\cgi-bin\. Right-click on the DxRSetup folder and select properties. Click the Security tab, and then click Permissions.
- c. Open the IIS Management Console. Use the tree view on the left to open the DxR Web site you created and navigate down the tree until the DxRSetup folder is visible.
- d. Right-click on the DxRSetup folder and select Properties. Click the Directory Security tab, then click Edit in the Anonymous Access section. Uncheck "anonymous access". Check "Basic Authentication". Click the Edit button to the right of Basic Authentication. This will allow only the user name you specified in step one to have access to this directory.

Updating an IIS/Perl Installation

If you are updating a previous installation of DxR Nursing on a Windows Server, you will also be updating your version of Perl. This requires an Updater to protect and preserve your existing installation of the DxR Nursing software. **Follow the steps below in the order listed to protect your site:**

1. Copy updater.pl to the cgi-bin folder of the web site containing your DxR in Nursing Practice installation.
2. Double-click on updater.pl and enter "a" for archive followed by "RETURN". When you see the script finishes, type "RETURN" to exit.
3. Uninstall Perl 5.6 using Add/Remove programs.
4. Install Perl 5.8.
5. Open a command prompt and type "ppm" to launch the perl package manager.
6. In the window that appears, select DB_File and select reinstall.
7. Click the green right-arrow to complete the installation of DB_File. Once the installation is complete you may close the ppm window.
8. In IIS, right-click on your DxR in Nursing Practice website and select Properties.
9. Click on the "Home Directory" tab.
10. Click on the "Configuration" button.
11. In the list that appears, find the .pl extension and remap it to:
c:\Perl\bin\perl.exe "%s" %s
12. Click "OK" to close the "Configuration" window.
13. Click "OK" a second time to close the "Properties" window.
14. Select "Web Service Extensions".
15. In the list that appears, find the "Perl CGI Extension" entry and set its status to "Allow".
16. Close the IIS manager.
17. Run updater.pl again, this time selecting "r" for restore.
18. Reboot the server.
19. Put the "DxR_Nursing_Update" folder in the cgi-bin\DxRSetup folder in your DxR in Nursing Practice web site.
20. Replace the dxrSetup.pl in that folder with the one that came with the update.
21. Give the web process owner ("Internet Guest Account") full control of the web site directory and contents.
22. In a browser window, navigate to your DxR in Nursing Practice web site and load the dxrSetup.pl script.
23. Click the "Update" button.
24. When the update is complete, remove the "DxR_Nursing_Update" folder from your cgi-bin\DxRSetup folder.

Installing DxR Nursing under Apache

Below is an example setup of DxR Nursing served by the Apache Web Server. The Apache Web Server is included with nearly every distribution of Linux® and Unix®. Some distributions provide a graphical user interface (GUI) to aid in configuration while others do not. Also, many distributions have modified file hierarchies, and configuration files. Therefore, if you, are unfamiliar with the process of setting up a web site, we recommended you consult your distributions documentation before proceeding.

Preparation

1. Determine where your DocumentRoot is located. (In our example below we have used /var/www/)
2. Uncompress the DxR Nursing archive in that location. Listing the contents of the directory one should see:

```
drwxr-xr-x 4 owner group      4096 2008-02-08 15:40 DxR_in_Nursing_Practice/  
-rw-r--r-- 1 owner group 47810560 2008-02-08 15:40 DxR_in_Nursing_Practice.zip
```

3. Within the DocumentRoot create a cgi-bin/DxRSetup/ directory.

```
$ mkdir -p cgi-bin/DxRSetup
```

4. Move the dxrSetup.pl script from within DxR_in_Nursing_Practice/ into cgi-bin/DxRSetup/.

```
$ mv DxR_in_Nursing_Practice/dxrSetup.pl cgi-bin/DxRSetup
```

5. Remove the archive (DxR_in_Nursing_Practice.zip).
6. Change the file ownership to the User and Group of the Apache Web Server.
7. Change the file permissions to 775 for all files. (Including the DocumentRoot itself.)

Apache Web Server Configuration

1. Determine if you are serving sites using Name-based Virtual Hosts or IP-based Virtual Hosts.
[reference: <http://httpd.apache.org/docs/2.0/vhosts/> or <http://httpd.apache.org/docs/1.3/vhosts/index.html>]
- 1a. If you are using Name-based Virtual Hosts set the NameVirtualHost directive.
2. Create a Virtual Host for your DxR Nursing site. The following VirtualHost configuration location is based on the distribution of Linux that you are using. It is recommended that you follow your distributions conventions on location of VirtualHosts. (In the example below we will assume that your DocumentRoot is /var/www/)

```
<VirtualHost ADDRESS>
    ServerName dxr.your_school.edu
    ServerAdmin webmaster@your_school.edu

    DocumentRoot /var/www/
    DirectoryIndex index.html
    <Directory />
        Options FollowSymLinks
        AllowOverride None
    </Directory>
    <Directory /var/www/>
        Options FollowSymLinks MultiViews
        AllowOverride None
        Order allow,deny
        allow from all
    </Directory>

    ScriptAlias /cgi-bin/ /var/www/cgi-bin/
    <Directory "/var/www/cgi-bin">
        AllowOverride None
        Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
        Order allow,deny
        Allow from all
    </Directory>

    ErrorLog /var/log/apache/error.log

    LogLevel warn

    CustomLog /var/log/apache/access.log combined
    ServerSignature On
</VirtualHost>
```

3. Start, or restart, the Web Server. If the Web Server started properly you may now begin setting up DxR Nursing. It is highly recommended, but not required to complete the Nursing setup, that you secure the directory utility. (see the next section) If the Web Server fails to start, check your error logs. Generally there will be a helpful explanation of what went wrong.

Related Web Sites:

Apache HTTP Server Project [<http://httpd.apache.org/>] - Get the Apache Web server and find helpful documentation.

Securing the Directory Setup

Your site includes the DxR Nursing Directory Setup Utility, which allows instructors to grant or deny access to the cases. We strongly recommend restricting access to this part of the site, using the `htpasswd` utility of Apache. The Apache configuration file entry to restrict access to this portion of the site will be something like:

```
<Directory /var/www/cgi-bin/DxRSetup>
    AllowOverride AuthConfig FileInfo Indexes Limit Options
    AuthUserFile /etc/access/.dxr
    AuthName "servername"
    AuthType Basic
    require user admin instructor
</Directory>
```

The command `htpasswd -c /etc/access/.dxr admin` will create the invisible file `.dxr`, and then prompt you for a password for the user `admin`. To add the second user, `instructor`, use the command `htpasswd /etc/access/.dxr instructor`, leaving out the `-c` option. You will again be prompted for a password.

IMPORTANT!

Remember to provide the Web address for the DxR Nursing Directory Utility to the academic person at your institution who administers use of the DxR Nursing software. Without this information, the academic users will not be able to access the software.

Client Side Program Requirements Checklist

Windows®

- Any of the following operating systems:
Windows® XP Service Pack 2 or later
Windows® Vista (32 bit)
- Adobe Shockwave® Player (a browser plug-in) version 11 or later must be installed for the selected browser.
(<http://get.adobe.com/shockwave/>)
- sound card
- headphones
- Internet connection and compatible browser (see Alert)
- monitor capable of 800x600 resolution and thousands of colors

Macintosh®

- Macintosh OS X 10.4 or later with Intel® processor
- Power Macintosh
- Adobe Shockwave® Player (a browser plug-in) version 11 or later must be installed for the selected browser.
(<http://get.adobe.com/shockwave/>)

Note: You must have the Shockwave® version 11 or later, using the FULL installation. If you use a SLIM installation, you may encounter problems within the DxR Nursing software.

- headphones
- monitor capable of 800x600 resolution and thousands of colors
- Internet connection and compatible browser (See Alert.)

ALERT

For browser compatibility information, see the insert to this publication or visit our Web site at <http://www.dxnursing.com/browser.html>

IMPORTANT!

Remember to provide the Web address for the DxR Nursing Directory Utility to the academic person at your institution who administers use of the DxR Nursing software. Without this information, the academic users will not be able to access the software.

HIDE/SHOW NOTE

After you click Hide/Show beside your directory name, if the next screen shows your directory name OR case name WITH a checkmark in front of it, it is visible on your Web site. If your directory name OR case name doesn't have a checkmark in front of it, it is not visible on your Web site. To change these settings, click inside the checkbox and then click Save Changes.

WARNING

Administrator Password is required to enter the **Management Utility** in the future.

DO NOT
lose this password!

1. Open a compatible browser and type in the Web site address where your institution's copy of DxR Nursing is installed.
2. Click the Directory Utility link and, when prompted, type in your institution's administrative password.
3. Enter a new alpha-numeric name in the text box next to "Directory" for the directory to be added. Use only alphanumeric characters in your directory name. Do not use symbols such as ;,/, etc. Spaces used in the name will be converted to "_" characters (e.g. jones_smith).

Note: Be sure to use a unique name when creating a directory. Duplicating a file name will delete existing case data.

- 4a. **To create a new directory**, click Create and proceed to step 5.
- 4b. **To work with an existing directory**, choose one of the following options under the directory name.
 - To add a case to an existing directory, click Install below the directory name, then proceed to step 5.
 - To hide or reveal a case within your directory, click Hide/Show next to the directory name. On the screen that appears, select the cases you wish to hide or reveal. (See Hide/Show note.)
 - To hide or reveal an entire directory from your Web site, click Hide/Show next to the directory name. On the screen that appears, click the checkbox to hide or reveal the directory on your Web site. (See Hide/Show note.)
5. Click in the check box(es) next to the name(s) of the case(s) to be added to the new directory.
6. Click Install SELECTED Cases to install the cases you marked, or click Install ALL Cases to install all available cases into your directory.
7. Review the list to verify that they are the cases you selected. To make changes to the case list, click your browser's "back" button.
8. Click Continue to verify your choices and add cases.
9. Enter an administrator password which will be used to enter the Management Utility. (**Do not lose this password.**) Click Continue.
10. After the installation is complete, click the link to your web site to access the Management Utility where you can customize how your case is presented to students.

http://(site address)/

The web site address is where *DxR Nursing* has been installed. The list of created Directories will be available at that site. (The site address may be obtained from the system administrator.)

11. Follow the steps on page 14 for creating/adding user accounts.

Description of Case Delivery Options

Save Student Activity Records

Allows a record to be kept of the student's work in this case. This record can later be imported into the Student Activity Record Utility (SARU) for instructor analysis.

Access to Physical Exam Screen

Allows students to perform a virtual physical exam. Turning it off disables the button for entry into the physical exam screen.

Access to Collaborative Problems Dialog

Allows students to enter Collaborative Problems. Turning it off disables the button for entry into the Collaborative Problems dialog.

Include Collaborative Problems in Nursing Dx List

If a student identifies and enters one or more Collaborative Problems in this case, the problems can be displayed along with the Nursing Diagnoses on the Nursing Dx List screen and prioritized along with the Nursing Diagnoses. If this preference is turned off, only Nursing Diagnoses can be prioritized.

Access to Select Diagnoses Screen

Allows students to select diagnoses after linking client data items to Framework Categories. Turning it off denies users access to the Select Diagnoses screen, where students view "clustered" data items and compare them to defining characteristics/risk factors while choosing diagnoses. **Warning: If this section is turned off, the users won't have access to the Care Plans section.**

Access to Defining Characteristics (of Nursing Dx's)

Allows the Defining Characteristics (per NANDA) to display with each diagnosis under consideration on the Select Diagnoses screen. If this preference is turned off nothing will display in the Defining Characteristics field of this screen.

Access to Care Plans Screen

Allows students to create Care Plans for faculty-approved Nursing Diagnoses. Turning it off disables the tab for entry into the Care Plans screen. If this preference is turned off, students can perform an assessment and diagnostic tasks but cannot create a Teaching Plan, Discharge/Summary Plan, or Care Plans, nor continue to other periods of virtual time in the case.

If you allow access to the Care Plans screen and have purchased the NIC/NOC module, choose the type of Care Plans that will be used:

NIC/NOC Care Plans

Allows you to require students to develop care plans using the NIC/NOC classification system.

D_xR Care Plans

Allows you to use the care plan classification system that is standard in all DxR Nursing Cases.

Access to Teaching Plan Screen

Allows students to type in a Teaching Plan for this client. Turning it off denies users access to the screen where the plan can be typed in.

Discharge Plan/Summary Screen

Allows students to type in a Discharge Plan/Summary for this client. Turning it off denies users access to the screen where the plan can be typed in.

Access to Case Questions

Makes the questions associated with the case available for the student to answer after exiting the case.

Display Options:

Answer/Rationale with Each Question

Select this option to display the correct answer and a rationale for it immediately after the user answers that question.

Answers/Rationales as Summary

Select this option to delay displaying the rationales until after the user has answered all the content related questions for this case. Users will not receive feedback designating the correct answers for the questions until after they have completed all questions for the case.

No Answers/ No Rationales

Select this option to display only the questions, but not the correct answers or rationales for the answers.

Note: You can access the Directory Utility from the Management Utility Case Delivery Options screen by clicking Directory Management Options.

CREATING STUDENT LISTS

To create a Student List:

1. Create a file using a recommended spreadsheet, database, or word processor IF IT IS SAVED AS A TEXT FILE. See FAQs in the Instructor manual for more detail.

A. Comma (,)-delimited text
First name, Last name, ID

B. Tab-delimited text
First name Last name ID

C. Slash (/)-delimited text
First name/Last name/ID

2. Save the file as a text file (with the .txt file extension).

Student IDs

Student IDs can be any combination of standard alpha-numeric characters, (such as abc 123). Please avoid using commas, tabs, or slashes as characters in student IDs.

Deleting an account is a permanent action. Deleting an account also deletes any student records associated with the user account(s).

1. After installation of cases is complete, click the link to your Web site to access the list of directories.
2. Select the directory containing the cases for which you want to add, edit, or delete student accounts. Click the Management Utility link under the appropriate case name. A new screen will open displaying the Management Utility.
3. Type in your administrative password to enter the User Accounts screen.

To import a list of students:

- ▶ Click "Import Student Roster to Create Accounts" and follow the instructions on the new Web page that will open on top of the Management Utility.

To add a student/user account:

- ▶ Type in the information and click "Add New Account."

To edit a student/user account:

- ▶ Select an account from the accounts listed on the right side of the screen.
- ▶ Modify the user information and then click "Save Changes."

To delete a student/user account:

- ▶ Click on the student's name in the list on the right of the screen.
- ▶ The student's information will appear in the text fields on the left.
- ▶ Click "Delete Account"
- ▶ Click "Delete All Accounts" to delete the accounts for all students listed.

Note: Give the ID number portion of the username to the student. When they enter that ID Number, the program will prompt them with the first name/last name portion of the user information to verify that it is the correct person. Make sure the student ID is kept confidential to ensure the security of student records.

Entering the Program

1. Set the monitor resolution to 800x600.
 - ▶ Shockwave® must be installed for the browser you are using to access the program. For the latest browser compatibility information, go to the following Web address:

<http://www.dxrnursing.com/browser.html>

2. Open the browser to the website containing the list of case directories. (If a directory has not yet been created, go to page 12 and follow the instructions provided there.)
 - ▶ Use one of the previously listed web browsers.
 - ▶ The website address can be obtained from the system administrator or course instructor.
3. Select the case to use by clicking the case name.
 - ▶ A Shockwave window will appear. Interactions with the program will occur in this window.
4. Click "Begin."
5. Enter a Student ID created in the Management Utility and click "Enter." (If Student IDs have not yet been created or need to be edited, follow instructions on page 14.)
6. Click "Yes" to confirm when your name appears.

Note: After confirming your name, you will be presented with a dialog warning you to work through the case study as efficiently as possible.

7. Review the presenting situation and then click "Yes."

INSTALLATION INSTRUCTIONS

How to Install Shockwave®

- ▶ If the current Adobe Shockwave® Player is not installed, a download prompt should appear when a case name is clicked. Follow the onscreen instructions.

- ▶ If a prompt does not appear, go to:

<http://get.adobe.com/shockwave/>

- ▶ Select the Adobe Shockwave® download link.

- ▶ Follow the onscreen directions to download the current version.