dx.factory Version 1.0
User Manual

www.xfactory–librarians.co.uk

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Welcome to dx.factory V1.0

Introduction

dx.factory is a cross platform Librarian for the Yamaha DX7 series of synthesizers, that allows you to organise your DX data from the comfort of your computer.

dx.factory has been written by me, Derek Cook, and is available exclusively as a free download from www.xfactory−librarians.co.uk. The free version is fully functional apart from the save and export features (including MIDI export) are disabled. This allows you to evaluate the features of dx.factory to see if you like it before buying it. If you wish to use dx.factory and enable the save and export functions you will need to register dx.factory and pay a shareware registration fee.

dx.factory was written as I have never been able to find a librarian for the DX7II that supports performance mode in the way that I want.

I am greatly interested in user feedback for shaping future versions of dx.factory. Comments and bug reports on the current features of dx.factory and requests for future features can be sent to dx7@xfactory−librarians.co.uk, or they can be posted in the DX7 forums of www.xfactory−librarians.co.uk.

dx.factory is programmed in Java, so it is capable of running on any platform that supports the Java version 1.4 and above.

The application has been developed and tested in JRE 5.0 running on a PC with the Windows XP operating system.

The screen shots you see in this manual have been taken with dx.factory running upon JRE 5.0. The look and feel of the application will vary depending upon your target JRE and computer platform, so don't worry if dx.factory looks slightly different upon your system.

Getting Started

Installation of dx.factory is quite staight forward, but as dx.factory is a Java application, it requires a Java Runtime Environment (JRE) to be installed on your computer.

To get up and running with dx.factory you will need to:

- Install a JRE if you do not already have one (V5.0 or later)
- Install the dx.factory software

Installing these two components is covered in the next section.

The minimum JRE version is JRE 5.0. Just to confuse everybody, the new version of Java is called 5.0, but it is the next release following 1.4. Indeed if you install JRE 5.0 and look at the installation directory, you will see the version number is 1.5. Sun must have their reasons for a quantum leap in the version number, but I'm even more confused as to why the installation directory numbering is not consistent!

PC Requirements

Any PC running either Windows 98, Windows ME, Windows 2000 or Windows XP should do the trick

Macintosh Requirements

A Macintosh running the Macintosh OSX V10.2 operating system or later is required. OSX has the Java Runtime Environment (JRE) built in to it, but you will need to ensure that you have the latest version.

Unfortunately, Apple have no plans to support the latest JRE in the "Classic" Mac OS, so dx.factory will not run on older MAC Operating Systems.

Installing dx.factory

Basically, you need two components on the system to run dx.factory:

- A Java Run Time Environment (JRE), J2SE 1.4 or above
- The dx.factory application itself, which is in the dxfactory.zip distribution file

dx.factory does not come with an installer, as I have not gotten around to setting one up yet. And to be honest, installation is just a matter of installing a few files onto your hard disk.

Java Run Time Environment

To run dx.factory you need Java 2 Standard Edition (J2SE) Version 5.0 of the Java Run Time Environment (JRE), or a later compatible release.

Installing a JRE for the PC

PCs are not provided with a J2SE JRE by default, so unless you are running other Java applications or web browser applets that need it, the chances are you won't have it.

To check if you have the correct JRE (if any) you need to go into the Windows Control Panel.

From the Task bar's "Start" button you can do this by selecting the "Settings" menu item, followed by the "Control Panel" sub menu item.

Once you're in the Control Panel, look for an icon called "Java". If you are running Windows XP then you will need to select the *Classic View* (by default the XP shows a *Category View*).

If you cannot find the Java icon in the control panel then you need to install a JRE.

If you have an earlier version than 5.0, you will need to upgrade. To check the version you have, double click the Java icon. How you check the version number in the Java control panel applet is dependent upon the version, but if you hunt around you should find the version number.

As Sun keep reorganising their site, and rather than trying and keep these instructions up to date, please visit www.xfactory–librarians.com/java for details on how to get the latest JRE.Once you have the download, install it by double clicking on the file and follow the installation prompts.

Installing a JRE for the Macintosh

MacOS X 10.2 or later is required, and Java V5.0 or later is required.

MaxOS X 10.3 with the latest updates and the latest Java V5.0 update is recommended.

You should check that you have latest MacOS X release and latest Java VM version installed by running the "Software Update" utility.

dx.factory cannot run on earlier versions of the "classic" Mac OS.

dx.factory Application

dx.factory is distributed as a standard Java JAR file.

(A JAR file is a Java Archive, which contains all the components required to execute the application).

Simply copy the file called dxfactory.jar from the dxfactory.zip distribution file to the location upon your hard drive where you wish it to be installed.

Along with the dx.factory JAR file, dx.factory also requires the *JH.JAR* file, which provides the online help support, and the **DOM4J.JAR** file, which provides XML support.

JH.JAR and the **DOM4J.JAR** files are included in the dxfactory.zip file, and all you need to do is copy the *JH.JAR* and **DOM4.JAR** files from the dxfactory.zip distribution file to the same directory where you placed dxfactory.jar

That's all that's needed for basic operation of the application.

For the PC, it's possible to create shortcuts in the normal manner to the dxfactory JAR file, so you can make it accessible in the way that suits you. E.g. I have a shortcut on my desktop.

Installing MIDI Extensions for MacOS X

If you wish to use the new MIDI support provided by dx.factory once you have [registered](#) dx.factory upon MacOS X, you will need to the ***PLUM–STONE*** MIDI extension.

This extension provides MacOS X Java programs access to all CoreMIDI devices, using standard Java classes.

You can download PLUM–STONE from the [Plumstone website.](#)

Then copy the supplied jar file to the /Library/Java/Extensions directory within the JRE installation.

Registering dx.factory

You need to register dx.factory to allow MIDI data to be exported to the DX7 and for data to be saved to your computer. Essentially dx.factory is released as "try before you buy" shareware. Prior to registration, you can run the program and load, import data and manipulate data to see the potential value of the program, but you will need to register and purchase a license file in order to save and export data.

Registration of dx.factory costs **$50 USD**.

My preferred payment mechanism is via Paypal, although I will consider other payment mechanisms as long as you are prepared to pay any additional costs associated with the transaction, and as long as it is not too laborious. If you wish to use an alternate payment mechanism then please email registration@xfactory–librarians.co.uk with the details. Please note that if I have to deal with a lot of registrations in one go, priority will be given to registrations using Paypal as the payment mechanism.

To start the registration process you will need the serial number of your copy of dx.factory.

To find your dx.factory serial number, select the **Register ...** option from the Help menu, and you will see the following dialog box.
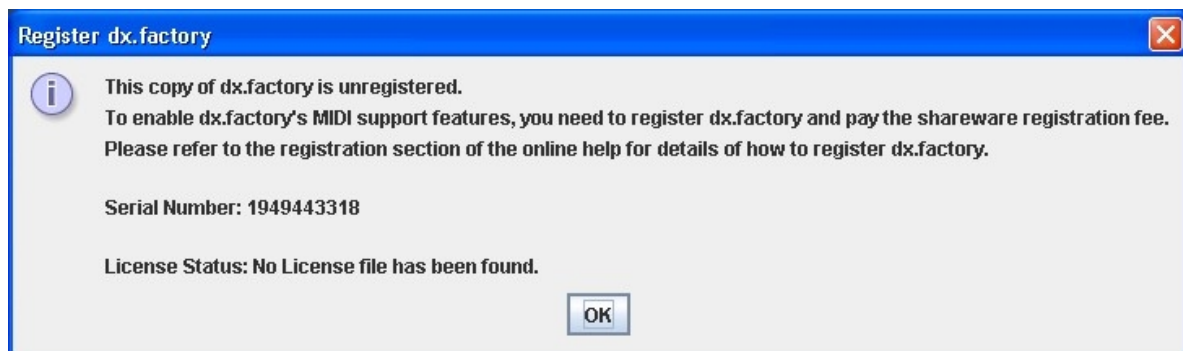
This is the dialog screen for an unregistered version, which is showing:

- That the copy is unregistered
- The **Serial Number** that you need to make a note of
- That no license file has been found

NB: The serial number given in the above dialog is an example. You will need to provide the one being reported upon your system as the serial number will vary from system to system To register dx.factory you need to make a note of the serial number from the registration dialog box and make a paypal payment of **$50 USD** to the following email address:

registration@xfactory–librarians.co.uk

Don't forget to include the serial number in the Paypal transaction details. Once I have received payment, I will issue the license key, which is generated using the serial number you have provided.

License Keys

Once I have received payment, I will generate a license key and send it back to you.

Please note that occassionally I work away from home (with limited or no Internet/email access), so please allow up to fourteen days to receive registration details or your license key before chasing me.

Once you have received the license key file (called license.jar), simply extract it from the zip file it comes in and place it in the same folder where you placed the main dx.factory application.

I send out the license key zipped up because some email service providers do not allow JAR files to be sent as attachments.

Please note that whilst dx.factory is freely distributable, the license key I send you is not. Please respect this and the amount of effort I have put into developing this application.

Please note that the license key may become invalidated if you do certain things to your machine configuration:

If you do invalidate your license key you will have to apply for a new one. This will not cost you any extra.

Whilst I appreciate that some people may view this as an inconvenience, I have done this to make pirating of the license keys by simple copying a little more difficult.

Running dx.factory

Simply double click on the program icon for the program either in an Explorer shell, or from the desktop if you've placed a shortcut there.

Please note that the start–up of the program (as for any Java Program) is a little slower than a "native" application.

During start–up, a "Splash Screen" is shown. This stays visible until a few seconds after the program has loaded and is ready for use, but can be dismissed at any time by clicking on the Splash Screen.

In operation you may occasionally notice a pause in the operation of dx.factory as a new resource is loaded (e.g. the first time a file dialog is accessed, it needs to be loaded from disk). Other than that you shouldn't notice any adverse speed problems, as Java is pretty zippy on modern computers.

dx.factory remembers the size and position of the main window between sessions, so the main window will be sized and positioned as you left it the last time.

You can also startup dx.factory from a command (MsDOS) shell. Simply change directory to where dx.factory is located and type the following:

> ***java –jar dxfactory.jar***

The dx.factory Window

The main dx.factory window looks like this
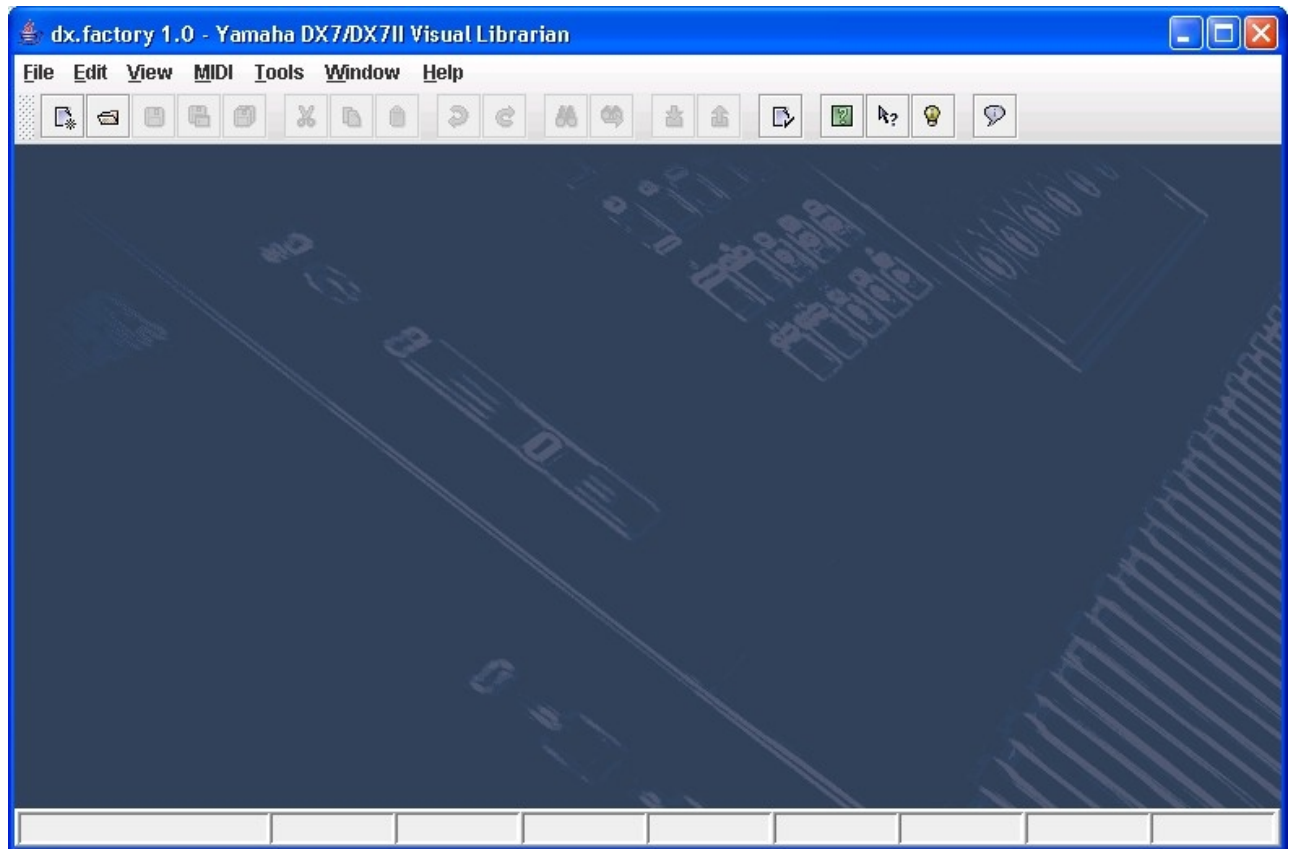
The dx.factory user interface is a Multiple Document Interface (MDI), which allows you to have more than one file open at a time.

The interface is divided into the now familiar layout of (from top to bottom):

- The Title Bar
- The Menu Bar
- The Tool Bar
- The Desktop
- The Status Bar

Menu Bar

The dx.factory menu bar provides a means of selecting common operations; typically those that affect a complete file, or those that don't fit naturally upon a context sensitive popup menu.

Keyboard Shortcuts are provided for common operations.

dx.factory also provides context sensitive popup menus, which are accessible by right clicking over data shown in a Child Window. Naturally the contents of the popup menus varies according to the type of data over which the menu was popped up.

Main Menu Headings

The following menu headings are available.

File   Edit   View   MIDI   Tools   Window   Help

- File Menu
- Edit Menu
- View Menu
- MIDI Menu
- Tools Menu
- Window Menu
- Help Menu

The File Menu

The *File* menu provides the following options:

New ...

Shows the Create New File Dialog, which allows you to create a new file.

Open ...

Shows the Open File Dialog, which allows you to open a specified file.

Save

Saves a file using its current name.

If the file in question is a newly created file, then the Save File Dialog is brought up to allow a name to be entered.

This option is only enabled if your copy of dx.factory is registered.

Save As ...

Saves the selected file after a name has been entered in the Save File Dialog.

This option is only enabled if your copy of dx.factory is registered.

Save All

Saves all files that have been modified using their current names.

This option is only enabled if your copy of dx.factory is registered.

Open Workspace ...

This option allows you to select a previously saved Workspace, which is a Collection of open windows, and the size and positions within the main dx.factory window.

When you select this option, a dialog opens which allows you to select an dx.factory workspace file (EXW).
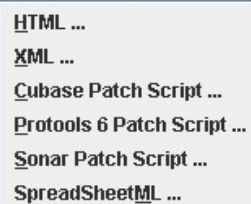
Save Workspace ...

This option allows you to save the current size and position of the main dx.factory window, and the arrangement of the open windows within dx.factory to a Workspace file.

This option is only enabled if your copy of dx.factory is registered.

Export to

This option brings up the following sub menu:

HTML ...
XML ...
Cubase Patch Script ...
Protools 6 Patch Script ...
Sonar Patch Script ...
SpreadSheetML ...

These options allow you to Export the data in the currently selected file to a variety of different formats.

This option is only enabled if your copy of dx.factory is registered.

Exit

Exits the dx.factory application.

If any files have been modified and have not been saved, you will be given the option of saving them.

The Edit Menu

The **Edit** menu provides the following options:

⟲ Undo	Ctrl-Z	
⟳ Redo	Ctrl-Y	
Clear Undo Buffer		
✂ Cut	Ctrl-X	
▯ Copy	Ctrl-C	
▯ Paste	Ctrl-V	
🔍 Find ...	Ctrl-F	
▯ Find Next	F3	
Goto ...	Ctrl-G	

Undo

Undos the previous edit stored in the Undo Buffer.

Redo

Redos the next edit stored in the Undo Buffer.

Clear Undo Buffer

Clears the Undo Buffer.

Cut

Places a copy of the selected Object(s) onto the Clipboard and deletes the selected Object(s) from the file.

Copy

Places a copy of the selected Object(s) onto the Clipboard.

Paste

Copys the Object(s) on the Clipboard into the highlighted location within the current file.

Find ...

dx.factory supports the ability to find Objects either by name or by category (where an Object supports categories, such as Voices).

Searches start from the currently selected Object.

Selecting the **Find ...** option brings up the Find dialog, that allows you to specify the string to search for, along with options that can be used to refine the search.

Find Next

If you have defined the **Find** criteria within the **Find** dialog, then this option will repeat the search using the same criteria.

Goto ...

Selecting this option brings up the Goto Dialog, which allows you to quickly navigate to a numbered Object.

The View Menu

The View menu provides the following options:

Note how some of the options change depending on whether or not the Child Window is split.

When the Child Window is split the **Left/Top Pane** and **Right/Bottom Pane** menu options have the following sub menu.

Tool Bar

When checked the dx.factory Tool Bar is visible.

Status Bar

When checked the dx.factory Status Bar is visible.

No Split

When checked the current Child Window is not split.

Horizontal Split

When checked the current Child Window is split horizontally.

Vertical Split

When checked the current Child Window is split vertically.

Tree

When checked the main/left/top pane in a Child Window displays data in a Tree View.

Table

When checked the main/right/bottom pane in a Child Window displays data in a Table View.

Refresh

Refreshes all open Child Windows.

This command is provided in case the screen is not properly updated following an edit operation. There are a couple of odd bugs I cannot track down on screen updates. So if you come across them as well, then this command will force a redraw of the windows.

Preferences ...

Opens the dx.factory Preferences Dialog.

The MIDI Menu

Note: The MIDI option is only visible if you have registered dx.factory and enabled MIDI support in the MIDI Preferences Tab in the Preferences Dialog.

The MIDI menu provides the following options:

Import From MIDI

Imports Voices and Performances from the DX via MIDI to the currently selected Window.

Export to MIDI

Exports Voices and Performances to the DX via MIDI from the currently selected Window.

MIDI Preferences ...

Opens the Preferences Dialog with the MIDI Preferences Tab active.

The Window Menu

The *Window* menu provides the following options:

In the example given above, you'll see that after the predefined menu options there are menu options that allow you to select the windows currently open within dx.factory (Analog3.SYX and BASELINE in our example menu).

Tile Horizontal

Arranges all non−minimised Child Windows along the horizontal axis.

Tile Vertical

Arranges all non−minimised Child Windows along the vertical axis.

Maximise Windows

Maximises all Child Windows so they all occupy the size defined by the desktop.

Restore Windows

Restores all maximised/minimised Child Windows to their normal state.

Minimise Windows

Reduces all Child Windows to their iconised state.

View DX Synthesizer Data

Opens or closes the DX Synthesizer Window which provides a view on preset and user DX synth data.

This option is only available if dx.factory has been registered and MIDI Support is enabled.

The Help Menu

The *Help* menu provides the following options:
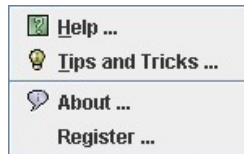
Help ...

Displays the dx.factory [Online Help](#) system.

Tips and Tricks ...

Displays the dx.factory [Tips and Tricks](#) Dialog.

About ...

Displays the dx.factory [About Dialog](#), which provides some basic information about the program, such as the version number.

Register ...

Displays the dx.factory registration Dialog.

See the [Registration Section](#) for details of how to register dx.factory.

Tool Bar

The Tool Bar contains buttons for common operations, such as opening and saving files.

Displays the New File Dialog to allow you to select the type of file to create
Displays the Open File Dialog to allow you to select a file to open
Saves the currently selected file
Displays the Save As Dialog to allow you to select a different name for the currently selected file
Saves all the open files to disk
Cuts the selected Objects and places them on the Clipboard
Copies the selected Objects and places them on the Clipboard
Pastes the contents of the Clipboard to the current selection
Undos the previous edit
Redos the previous edit
Displays the Find Dialog to allow you to define the search criteria and then search for the first occurence
Searches for the next occurence of the search criteria defined in the Find Dialog
Imports Voices/Performances from the DX via the MIDI interface
Exports Voices/Performances to the DX via the MIDI interface
Displays the Preferences dialog where you can configure dx.factory
Displays the dx.factory Online Help index page
Enables Context Sensitive Help
Displays the Tips and Tricks Dialog
Displays the About Dialog

The Save and Midi Export buttons are only enabled if dx.factory is Registered.

The Tool Bar can be dragged and made a floating toolbar by clicking and dragging the handle to the left of the Tool Bar.

The Tool Bar can also be dragged to a different window border other than the top border.

The Tool Bar can be hidden/unhidden by the *Tool Bar* menu option on the View menu.

The Tool Bar whilst floating can be docked once more by closing it.

Desktop

The Desktop portion of the window is where the DX data is portrayed. Several files may be opened and shown within [Child Windows](#) upon the Desktop portion of the window. The following example shows three [Child Windows](#) open on the Desktop.
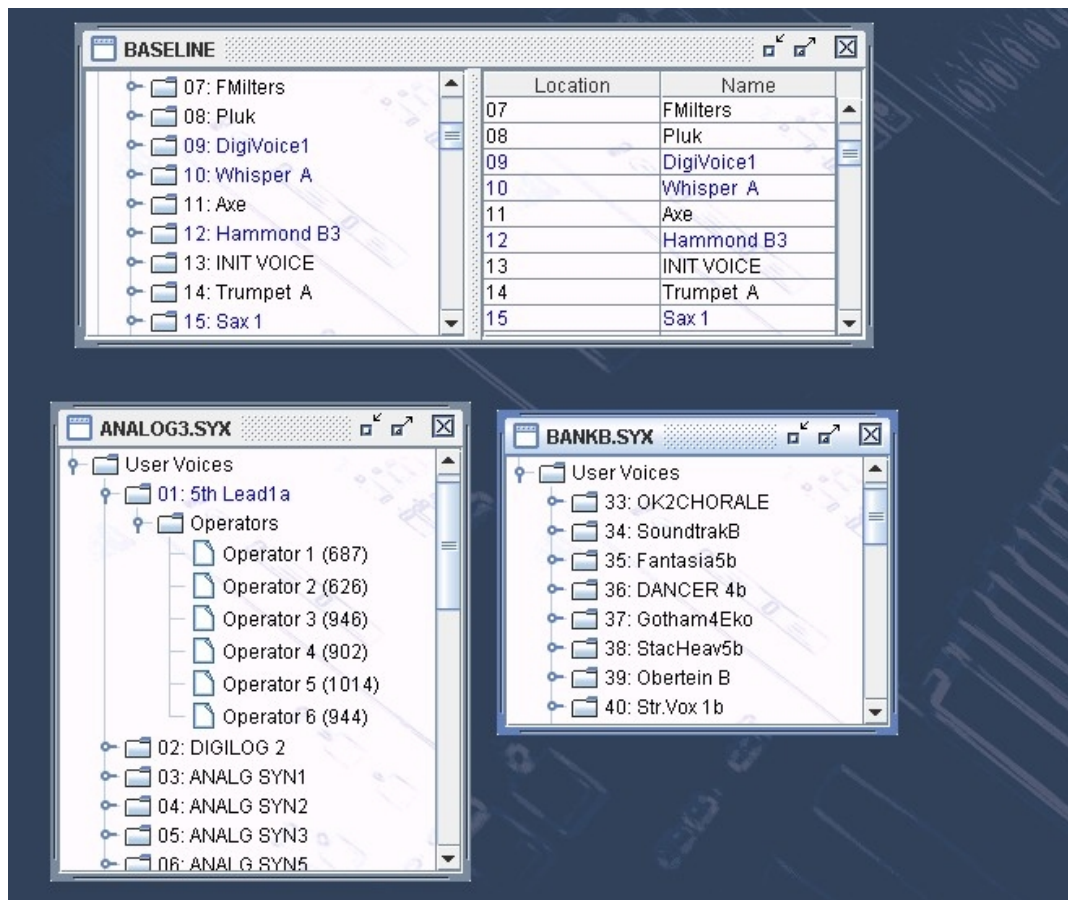
The [Window Menu](#) provides menu options to:

- Tile (either vertically or horizontally) all [Child Windows](#) that are not iconised
- Minimise all [Child Windows](#)
- Maximise all [Child Windows](#)
- Restore all [Child Windows](#)
- Select a specific [Child Window](#)
- Open the [DX Synthesizer Window](#)

When a file is opened, a [Child Window](#) is added to the Desktop Area.

Child Window

The Child Window provides the *View* upon the data within the file it is associated with.

The Child Window is maximised by default when it is opened, and can be minimised, restored or closed by the buttons to the right of the Child Window's title bar.

The menu options on the View menu can be used to change the View to a Table view, which can show either a Voice Table in S1V, S1A or S1Y files and/or a Performance table in S1A and S1Y files.

It's also possible to have either a horizontally or a vertically split View which can show any of the following combinations:

- A Tree and a Table
- A Table and a Tree
- Two Trees
- Two Tables

The default Child Window View applied when a file is opened is set in the Default View Tab of the Preferences Dialog.

The following example shows a Child Window that is split and showing both a Tree View and a Table View on the same data.
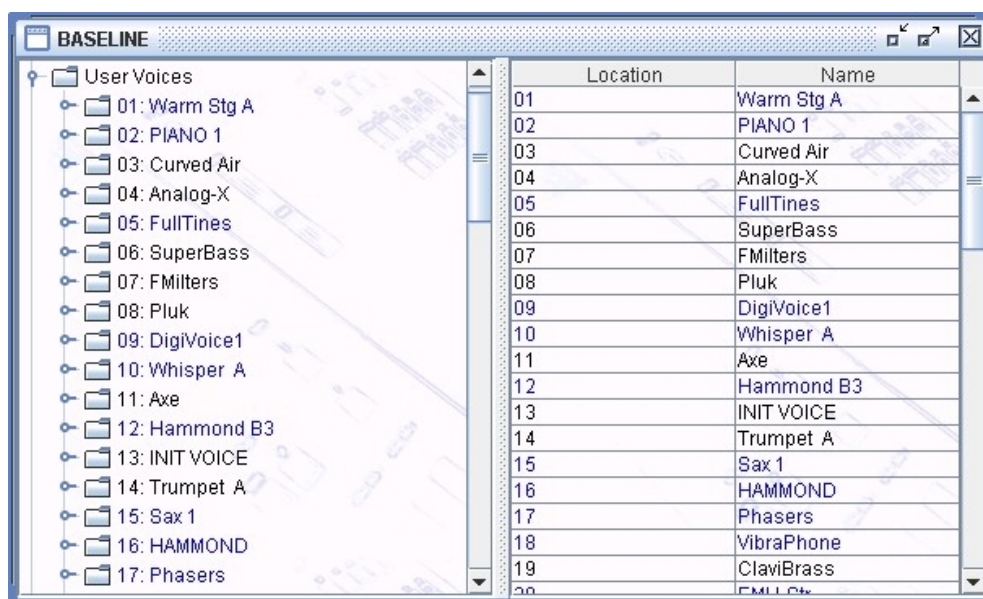
The Tree and Table views support drag move and drag copy operations, and the views will automatically scroll whilst drag operations are in progress.

dx.factory also provides a special Child Window called the DX Synthesizer Window.

Tree View

The **Tree View** shows the DX data as a hierarchical tree, and can show more information than the [Table View](#). The following example shows a split [Child Window](#) with two Tree Views, one collapsed showing the top level **Collections** and one showing a Performance (01) that has been expanded to show more information on the Performance.
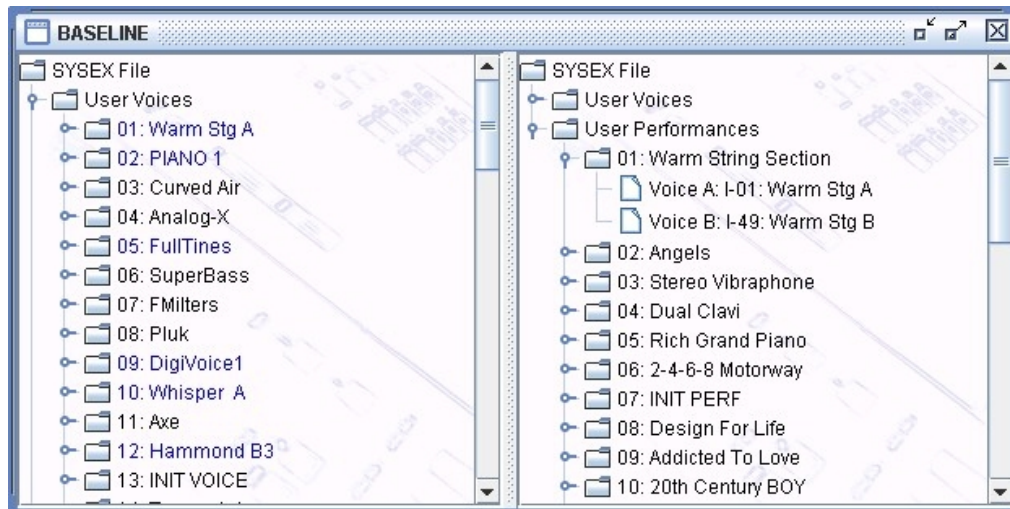
Basically, information is shown as a set of hierarchical **Objects**. Objects may have children attached to them, and they themselves may have further child Objects (e.g. a Voice Object, has a child Object for its Operators, and this Object groups all the Operators of the Voice).

The basic tree structure is a **Root Object** at the top of the tree under which are various Object **Collections** which themselves contain further data. The top level Collections that can be found under the root node varies upon the file type:

- SYSEX File – this is the root of the data currently loaded and a container for all data held in the DX Synthesizer data file which has been loaded. This root is always present.
- User Voices – The Voices from an DX SYSEX data file
- User Performances – The Performances from an DX SYSEX data file

Objects are displayed in one of two colours:
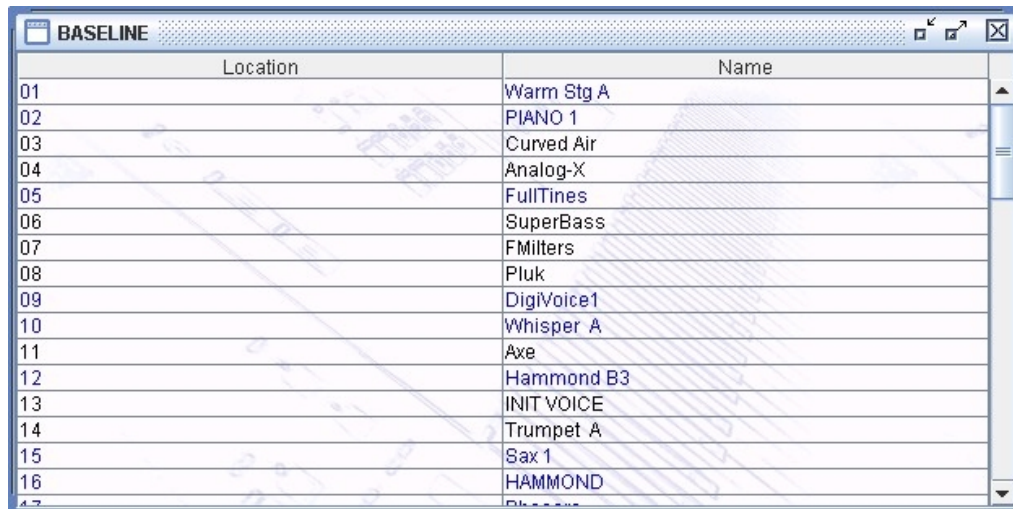
- Black if the Object is not referenced by another Object
- Blue if an Object is referenced by another Object (e.g. a Voice being used within a Performance, or a Sample being used by a Wave)

The Tree View allows multiple Objects to be selected, which is useful for performing operations only upon certain Objects. You can only perform operations upon Objects of the same type.

If you wish to perform an operation upon all Objects in a Collection, simply select the Collection containing the Objects.

Table View

The Table View provides a more high level overview of the data than the [Tree View](#), and the representation of the data is more compact. The following example shows a [Child Window](#) with a single Table View providing information on a file's Voices.

The Table View can only show one Collection of Objects at a time.

Currently the Table View can show Voices in SYSEX files or Performances in SYSEX files.

You can select whether a Table View shows Voices or Performances by right clicking within the table to access the context sensitive menu, upon which can be found menu options to select either a Voice Table or a Performance Table.

Each row within the table shows one Object.

The Table View's context sensitive popup menus support editing operations. The cell in a Row that contain the Object **Name** can be directly edited by clicking in it.

DX Synthesizer Window

The DX Synthesizer Data Window is made visible by ensuring the **View DX Synthesizer Data** option in the Window Menu is checked.
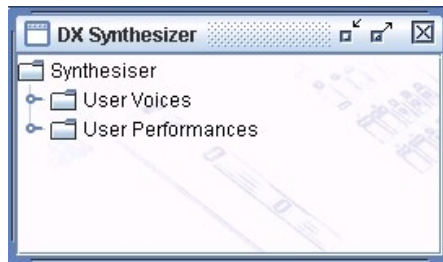
This Child Window is a special View that shows the following DX User Data **Collections**:

- User Voices
- User Performances

The purpose of showing these User Data Collections is to allow drag and drop transfers of User Voices and User Performances between dx.factory and the DX via the MIDI Interface.

Status Bar

C:\DX7\Voices\BASELINE	SYSEX File	Modified					Voices	Voices

The Status Bar provides the following pieces of information (from left to right) for the Child Window which is currently selected:

- The name of the file currently open, if any. If no file has been selected then this field is blank
- The type of the file
- Whether or not the file has been modified
- If the left/top split pane is a table this indicator identifies what the table is showing (Voices or Performances)
- If the right/bottom split pane is a table this indicator identifies what the table is showing (Voices or Performances)

The Status Bar can be hidden/unhidden by the **Status Bar** menu option on the View menu

Program Features

dx.factory provides the following features:

- [File Operarations](#)
- [Undo/Redo Support](#)
- [Clipboard Support](#)
- [MIDI Support](#)
- [Find and Goto Support](#)
- [Editing Features](#)

File Operations

dx.factory supports the following file operations:

- Create New Files
- Open Existing Files
- Save Files
- Open and Save Workspaces
- Export Data

Create New File

When the **New File ...** option from the [File](#) Menu or the ⬚ button on the [Toolbar](#) is selected:

- If the **_Device Type Setting_** in the [Device Type](#) Tab in the [Preferences](#) Dialog is set to DX7 then a new file that contains 32 Voices is created
- If the **_Device Type Setting_** in the [Device Type](#) Tab in the [Preferences](#) Dialog is set to DX7II then the following dialog is shown:

This dialog allows you to select what banks are created in the file from the following:

- Voice Bank A
- Voice Bank B
- Performance Bank

The initial values for these settings are setup in the [New File Default Preferences](#) Tab in the [Preferences](#) Dialog.

The new data file is given a name in the form of "dxfactory_n", where **_n_** is a number that increments every time a file is created.

Note, this is different from initialising data in a file, as a totally new file is created.

Open Existing File

When the *Open ...* option from the File menu or the ⬡ button on the Toolbar is selected, the following dialog will appear allowing a file to be selected.
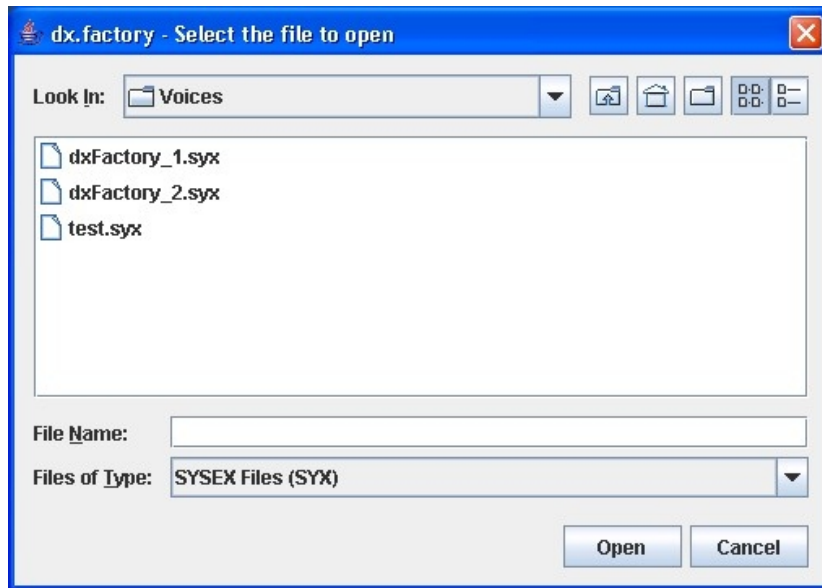
dx.factory checks to ensure that the selected file is a valid Yamaha format file, and an error dialog will appear if the file is not valid.

If a file selected for opening is already open, dx.factory will ask if you want to replace the file that is in memory.

Save Open Files

When you save a file to disk using: the **Save As ...** command from the File Menu, or when a file created using the **New ...** command from the File Menu is saved for the first time, the following dialog appears to allow you to select a name for the file
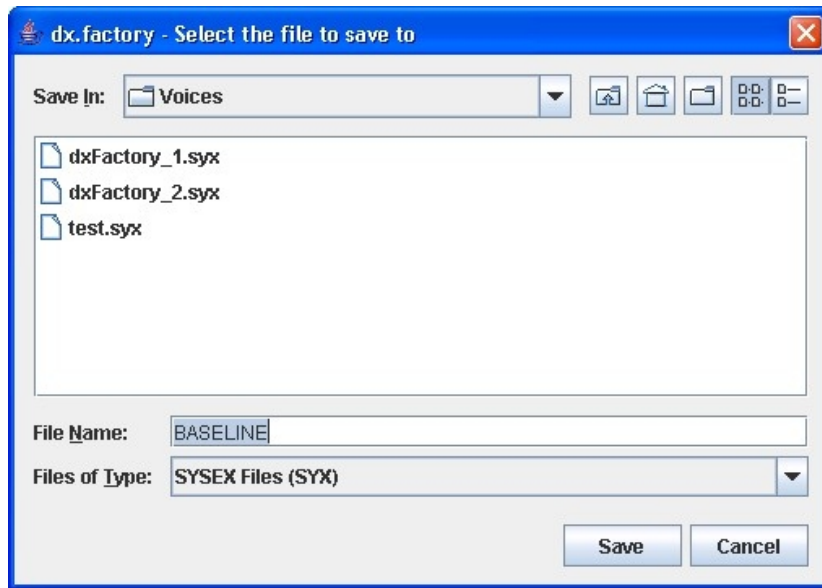
Workspaces

dx.factory allows you to save the current size and position of the main dx.factory window, and the arrangement of the open Child Windows within dx.factory to a file known as a **Workspace**.

This allows you to save a **Workspace** you are using for future recall at a later date.

The following for each Child Window remembered:

- Window size, position and status (normal, maximised or minimised)
- Horizontal/Vertical Splits, including split position
- Pane type(s) (e.g. Tree, Voice Table or Performance Table)
- Tree node expansion status
- Table column widths
- Scroll position of the pane(s)
- Selection state of the tree nodes, or table rows

Export Data

dx.factory allows you to export the data in the currently selected file to a variety of different formats.

- HTML
- XML
- Cubase VST Patch List
- ProTools Patch List
- Sonar Patch List
- SpreadSheetML

HTML ...

This option allows you to export a listing of the data in HTML format.

If the file being printed contains several banks, the following dialog will appear allowing you to select the features to be exported:

XML ...

This option allows you to export a listing of the data in XML format.

If the file being printed contains several banks, the following dialog will appear allowing you to select the features to be exported.
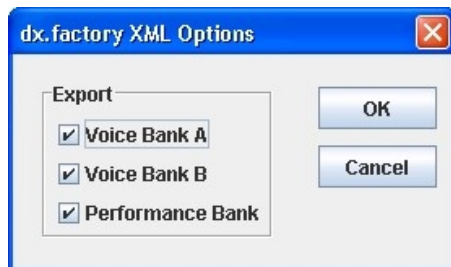
This export option is intended to provide a means of importing DX data into other programmes, e.g. a database

Cubase VST Patch Script ...

This option allows you to export a listing of the Voice/Performance data in Cubase VST patch script format.

This allows you to create patch scripts for use within Cubase to ease the selection of patches within the Cubase environment.

Consult your sequencer documentation for details on how to install the patch scripts within your sequencer.

Protools Patch Script ...

This option allows you to export a listing of the Voice/Performance data in Protools patch script format (MIDMAN files).

This allows you to create patch scripts for use within Protools to ease the selection of patches within the Protools environment.

Consult your sequencer documentation for details on how to install the patch scripts within your sequencer.

Sonar Patch Script ...

This option allows you to export a listing of the Voice/Performance data in Sonar patch script format.

This allows you to create patch scripts for use within Sonar to ease the selection of patches within the Sonar environment.

Consult your sequencer documentation for details on how to install the patch scripts within your sequencer.

SpreadSheetML ...

This option allows you to export a listing of the data in Microsoft SpreadSheetML format.

The following dialog will appear, allowing you to select the features to be exported.

This export option is intended to provide a means of importing DX7 data into either Microsoft Word or Excel, which is a great way to start documenting your patch collections.

Undo Buffer

dx.factory supports a multi−level Undo/Redo Buffer facility on all edits.

The number of edits which are stored is 100.

The Undo/Redo commands can be found both within the Edit Menu, and on the Toolbar.

Please note that the undo buffer is global across all open files, and is cleared when any file is closed. This may be improved in later releases.

The undo buffer can be cleared by the selecting the **Clear Undo Buffer** option on the Edit Menu. The intention of this feature is to help cope with low memory situations, as it will free up the memory used by stored edits.

Clipboard Support

The dx.factory clipboard works just like the clipboard in other applications. It allows you to place an Object or a copy of an Object upon the clipboard and then paste that Object elsewhere within a file or another file.

You can Cut/Copy either a single Object or a Collection of Objects onto the clipboard.

You can only paste from the clipboard to the current location in a file if it makes sense to do so. For example:

- You cannot paste a Voice onto a Performance
- You cannot paste ten Voices at the end of a Voice Collection if the selection is at Voice 56 or higher

The dx.factory clipboard is "local" to the application, and only dx.factory Objects can be placed upon it.

dx.factory does not support the system clipboard so it is not possible to cut and paste between dx.factory and other applications. I don't think this is a major drawback because I cannot think of any circumstances where you would wish to do this!

MIDI Support

To use dx.factory MIDI Export support, your copy of dx.factory needs to be registered.

Configuring MIDI Support

To configure MIDI support, go to the MIDI Preferences tab in the Preferences Dialog, and set up the following:

- *Input MIDI Port* and *Output Midi Port* should be set to the MIDI port(s) to which the DX is connected
- *SYSEX Device Number* should match the DX7 *Device Number* setting

If the Device Number on the DX is set to *ALL* then it will accept data for any SYSEX Device.

You can check that these settings work by pressing the *Test DX MIDI Settings* button. When you press this button a test message is sent to the DX and the subsequent Dialog will tell you if communication was successful or if there was a problem.

The above steps set up the basic communication mechanism for MIDI support, and you then can set up the remaining options according to your preferences:

- If you never work with Performances then you can exclude them from the bulk transfers by clearing the *Include Performances in Bulk Transfer* checkbox
- If you wish for dx.factory to always read the DX Voice/Performances on startup then check the *Read DX MIDI Data on Startup* checkbox
- If you wish for changes made to the DX Synthesizer Window to be automatically written to the DX then check the *Automatically Update DX after Synth Window Edit* checkbox

The **Transmit Buffer Size**, **Transmit Delay Between Buffers** and **Transmit Delay Between Objects** values should not require adjustment. dx.factory sends data to the DX7 by dividing the data into packets the size of which are specified by the **Transmit Buffer Size** value. When dx.factory sends a packet it waits for the time period specified by **Transmit Delay Between Buffers** before sending the next packet, and it waits for the time period specified by **Transmit Delay Between Objects** after the last packet is sent. The delay parameters are specified in milliseconds. You may need to adjust these values (smaller buffers, longer delays) if communications is not reliable, and you may if you wish adjust these values (larger buffers, smaller delays) to maximise data transfer performance. If you adjust these values, please ensure that you test the transfer to ensure it is reliable, *otherwise you may risk losing data*. Note: Some MIDI interfaces do not like large packet sizes: I recently upgraded to a MOTU interface and ran into problems with MIDI export until I altered dx.factory to send messages in small chunks defined by the above parameters!

Copying/Moving Voices and Performances

In operation, using MIDI is quite straightforward.

You can get all the DX Voices/Performances into any Child Window (including the DX Synthesizer Window) by selecting the *Import from MIDI* option on the MIDI Menu, or the button on the Tool Bar.

This imports all Voices, and all Performances if you have set the MIDI Preferences options to include Performances during the bulk transfers.

Similarily you can also export all Voices and Performances using the *Export MIDI* option on the MIDI Menu, or the button on the Tool Bar.

Note if you import or export MIDI data to/from a Child Window which is opened from a data file, then the DX Synthesizer Window is also updated with the Voices/Performances being imported/exported.

And you can also move/copy Voices/Performances between the DX Synthesizer Window and Child Window using drag and drop.

You can also import/export a Voice or Performance to/from the DX Edit Buffer by selecting a single Voice/Performance and selecting the import/export to/from DX Edit Buffer options from the Voice's or Performance's Context Sensitive Menu. You can also use the keyboard shortcuts for doing this

Exporting Voices from dx.factory to the DX Edit Buffer is really handy, for example, when trying to find a particular Voice in a file and you don't wish to load it into the DX.

Finally you can also perform all the operations on Voices/Performances in the DX Synthesizer Window that you can upon Voices/Performances in a normal Child Window.

If you have the *Automatically Update DX after Synth Window Edit* option active, when you change data the DX Synthesizer Window then the changes are automatically exported to the DX.

So you may wish to turn the **Automatically Update DX after Synth Window Edit** option off during intensive editing sessions. Once you've made all your changes you then select the **Export MIDI** option on the MIDI Menu, or the ⬆ button on the Tool Bar Export option to manually export the changes.

If you quit dx.factory with changes still present in the DX Synthesizer Window that have not been exported, then you will be asked if you wish to export the data or not.

Find and Goto Facilities

Find Dialog

dx.factory supports the ability to find Objects by name.

Searches start from the currently selected Object.

Selecting the *Find ...* option on the Edit Menu brings up the *Find* dialog, that allows you to specify the string to search for. In addition there are several options that can be selected

Find What	The text string to search for.
Match Case	If this option is checked then the search is case sensitive. If this option is not checked then the search is case insensitive.
Match Whole Name	If this option is checked then the search string must match the entire name of an Object. E.g. "pan" would match a Voice called "pan", but not a Voice called "pandora". If this option is not checked then the search can match a sub string within a name. E.g. "dor" would match a Voice named "dor" and a Voice called "pandora".
Use Wild Cards	If checked dx.factory will treat the "Find What" text as a "regular expression" to allow you more control over the search, such as matching text at the start of a name, or the end of a name, words with numbers in, etc.

The regular expression language used for dx.factory wild card support is the Perl Regular Expression Syntax. Rather than try and write up this powerful syntax myself into the dx.factory documents, I'll direct you to the Perl Regular Expression Syntax page for a description of how to use this powerful feature.

Goto Dialog

Selecting this option on the on the Edit Menu brings up the *Goto* Dialog

Item Type	The type of Object to go to • The types of Objects that can be selected depends upon the type of file • If a Voice Table is the selected view, then you can only Goto another Voice • If a Performance Table is the selected view, then you can only Goto another Performance
Item Number	The number of the Object to go to.

Editing Features

dx.factory supports the following editing features:

- [General Editing Features](#)
- [Synth Editing Features](#)
- [Voice Editing Features](#)
- [Performance Editing Features](#)

General Editing Features

dx.factory supports many editing features, some of which are classed as general features that are applicable to all or most Objects.

The general features are described here in one place for convenience:

- Copy/Move Object
- Initialise Object
- Rename Object
- Insert Object
- Delete Object
- List Object References
- Sort Objects

The following table shows whether or not a general edit operation can be applied to a particular type of Object:

Object Type	Move	Copy	Initialise	Rename	Insert	Delete	List	Sort
Synth Object	Y	Y	Y	N	N	N	N	N
Voice Collection	Y	Y	Y	N	N	N	N	Y
Voice	Y	Y	Y	Y	Y	Y	Y	N
Voice Operator Collection	Y	Y	Y	N	N	N	N	N
Voice Operator	Y	Y	Y	N	Y	Y	N	N
Performance Collection	Y	Y	Y	N	N	N	N	Y
Performance	Y	Y	Y	Y	Y	Y	N	N
Performance Part	N	N	Y	N	N	N	N	N

Copy/Move Object

dx.factory makes extensive use of drag and drop for copying and moving Objects.

You can drag copy or move Objects within a file or between files, and you can drag single items or multiple items.

The default drag operation is to move an Object, and there are two types of move operations:

- Moving an Object within its Parent Collection (e.g. moving a Voice from location 1 to location 4)
- Moving an Object to a new Parent Collection (e.g. moving a Voice from one file to another file)

When you move an Object to a new Parent Collection then the original Object is removed and replaced with an initialised Object of the same type.

To copy an Object using drag and drop, you must have the **DRAG MODIFIER** key held down during the operation. The **DRAG MODIFIER** key is platform dependent. On the PC platform it is the **CTRL** key.

You can tell that a copy operation is in progress as the drag image icon has a **+** sign visible.

When you drag multiple items they must be of the same type. For example you can drag several Voices, but not Voices and Performances together.

dx.factory provides the following drag/drop feedback to assist in determining the effects of a drag/drop operation:

- Cursor: Indicates if the move is either a copy or a move, or if the drop is invalid (e.g. trying to drag a Voice onto an Element)
- Drag image: A simple pictorial representation of what is being dragged
- Drop Point: dx.factory shows the drop point as either a cue line drawn between Objects if an Object is being moved within its parent (e.g. an Operator within a Voice), or a cue rectangle drawn around the drop location for all other moves and copy operations which are valid

When a **_Child Window_** is split, Objects can be dragged and dropped between either side of the split point. This is handy, for example, for dragging Objects between the start of a Collection and the end of a Collection.

The **_Tree_** and **_Table_** views will auto–scroll in drag and drop operations, when you move the cursor to either the top or the bottom of the pane and hold it there.

If you drag an Object onto a **_Tree View_** and over a valid parent Object (e.g. an Operator over a Voice) and the parent Object is collapsed within the Tree, and you hold the cursor over the Parent Object for a few seconds it will automatically expand.

dx.factory will maintain the references to Voices in Performance Parts when moving Voices within a file.

For example if you move a Voice from Location 2 to Location 10, then any Performance Parts which are referencing Voices at Locations 2 and above will be updated to ensure they still reference the same Voices after the move operation as they were before the move operation.

The ability to update Voice references following a move or to copy referenced Voices during a move to a new file can be selectively turned on or off within the Preferences Dialog.

Initialise Object

Initialises the selected Object to its default state.

Multiple Objects of the same type can be selected for initialisation.

The **Initialise** command is found upon the **Context Sensitive Menu** in both the Tree View and the Table View.

Rename Object

Renames the selected Object using the following dialog:
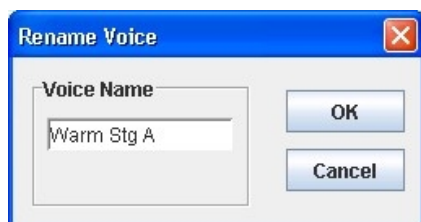
Only one Object can be selected for renaming.

The **Rename** command is found upon the **Context Sensitive Menu** in the [Tree View](#)

To rename Objects in the [Table View](#) , simply double click in the **Name Cell** of the required Object to edit the name.

Insert Object

Inserts an Object into a Collection at the current location.

The **Insert** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

You can insert more than one Object at a time by selecting multiple Objects prior to executing the **Insert** command.

For example if you wish to insert three Performances at location 10, select Performances 10, 11 and 12 and then execute the **Insert** command.

Note that when you insert one or more Objects, then the commensurate number of Objects at the end of the Parent Collection are removed if required. This is necessary to maintain the correct number of Objects in a Collection.

For example, a DX7 Voice Collection can only contain 32 Voices, so if two Voices are inserted into the Collection then two Voices must be removed from the end of the Collection to maintain the correct size.

dx.factory will maintain the Performance Part references to Voices when inserting Voices.

For example if you insert a Voice into a file at Location 10, then any Performance Parts which are referencing Voices at Locations 10 and above will be updated to ensure they still reference the same Voices after the insert operation as they were before the insert operation.

Delete Object

Deletes an Object at the current location.

The **Delete** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

You can delete more than one Object at a time by selecting multiple Objects prior to executing the **Delete** command.

For example if you wish to delete three Performances at location 10, select Performances 10, 11 and 12 and then execute the **Delete** command.

Note that when you delete one or more Objects, then a commensurate number of Objects at the end of the Parent Collection are added if required. This is necessary to maintain the correct number of Objects in a Collection.

For example, a DX7 Voice Collection must contain 32 Voices, so if two Voices are deleted from the Collection then two Voices must be added to the end of the Collection to maintain the correct size.

dx.factory will maintain Performance Part references to Voices in a Collection when deleting Voices.

For example if you delete a Voice from a SYSEX file at Location 10, then any Performance Parts which are referencing Voices at Locations 10 and above will be updated to ensure they still reference the same Voices after the delete operation as they were before the delete operation.

List Object References

The **List References** command is found upon the **Context Sensitive Menu** in both the [Tree View](#) and the [Table View](#).

The **List References** command is only available if:

- Only one Voice is selected
- The Voice selected is referenced by a Performance, which is indicated by the Voice being coloured blue

The references are shown as follows:
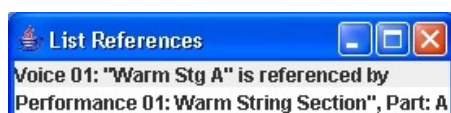
The Voice being referenced is shown at the top of the Dialog followed by the Performances referencing it.

Sort Objects

The *Sort by Name* command is found upon the *Context Sensitive Menu* in both the Tree View and the Table View.

In the Tree View the sort options are accessed via the *Context Sensitive Menu* for the Collection that you wish to sort (e.g. the Voice Collection to sort Voices).

In the Table View the sort options are accessed via the *Context Sensitive Menu* for any Object. The sort can also be initiated by clicking in the *Name* column header.

Synth Editing Features

dx.factory supports the following editing operations upon the **Synth Object** within the [Tree View](#) of a [Child Window](#):

- [Move](#)
- [Copy](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access these features, right click over the **Synth Object** to activate the **Synth Object's** Context Sensitive Menu.

The **Synth Object** is only shown within a [Tree View](#) and is the first Object in the [Tree View](#). It is called:

SYSEX File

Voice Editing Features

dx.factory supports the following editing operations upon the **Voice Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Sort by Name](#)
- [Import Data From DX7](#)
- [Export Data to DX7](#) (only available if dx.factory is [registered](#))
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

The **Voice Collection** Object in file is only shown within a [Tree View](#) and is called **User Voices**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Voice Collection** to activate the **Voice Collection's** Context Sensitive Menu.

dx.factory supports the following editing operations upon the **Voice Objects** within the [Tree View](#) or [Table View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Rename](#)
- [Insert](#)
- [Delete](#)
- [List References](#)
- [Import from DX7 Edit Buffer](#)
- [Export to DX7 Edit Buffer](#) (only if available dx.factory is [registered](#))
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Voice** or selection of **Voices** to activate the **Voice's** Context Sensitive Menu.

You can also directly edit the [Voice Operators](#)

Import from DX Memory

Imports Voices from the DX Memory locations into the currently selected [Child Window](#).

Export to DX Memory

Exports Voices from the currently selected [Child Window](#) to the DX Memory locations.

Import from DX Edit Buffer

Imports the Voice currently in the DX Edit Buffer (i.e. the currently selected Voice on the DX) into the Voice currently selected within the active [Child Window](#).

Note if you have more than one Voice selected then this operation is not available

Export to DX Edit Buffer

Exports the Voice currently selected within the active [Child Window](#) to the DX Edit Buffer.

Note if you have more than one Voice selected then this operation is not available

Voice Operator Editing Features

dx.factory supports the following editing operations upon the **Voice Operator Collection** shown within the [Tree View](#) of a [Child Window](#):

- [Copy/Move](#)
- [Initialise](#)
- [Cut to Clipboard](#)
- [Copy to Clipboard](#)
- [Paste from Clipboard](#)

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Voice Operator Collection** to activate the **Voice Operator Collection's** Context Sensitive Menu.

dx.factory supports the following editing operations upon the **Voice Operator Objects** within the Tree View of a Child Window:

- Copy/Move
- Initialise
- Insert
- Delete
- Cut to Clipboard
- Copy to Clipboard
- Paste from Clipboard

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Voice Operator** or selection of **Voices Operators** to activate the **Voice Operator's** Context Sensitive Menu.

Performance Editing Features

dx.factory supports the following editing operations upon the **Performance Collection** shown within the Tree View of a Child Window:

- Copy/Move
- Initialise
- Sort by Name
- Import Data from DX7
- Export Data to DX7 (only available if dx.factory is registered)
- Cut to Clipboard
- Copy to Clipboard
- Paste from Clipboard

The **Performance Collection** Object in a file is only shown within a Tree View and is called **User Performances**.

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over the **Performance Collection** to activate the **Performance Collection's** Context Sensitive Menu.

dx.factory supports the following editing operations upon the **Performance Objects** within the Tree View or Table View of a Child Window:

- Copy/Move
- Initialise
- Rename
- Insert
- Delete
- Import from DX7 Edit Buffer
- Export to DX7 Edit Buffer (only if available dx.factory is registered)
- Cut to Clipboard
- Copy to Clipboard
- Paste from Clipboard

To access all features other than Move and Copy (which you do via "Drag and Drop"), right click over a **Performance** or selection of **Performance** to activate the **Performance's** Context Sensitive Menu.

You can also directly edit the Performance Parts that make up a **Performance**:

Import from DX Memory

Imports Performances from the DX Memory locations into the currently selected Child Window.

Export to DX Memory

Exports Performances from the currently selected Child Window to the DX Memory locations.

Import from DX Edit Buffer

Imports the Performance currently in the DX Edit Buffer (i.e. the currently selected Performance on the DX) to the Performance currently selected within the active Child Window.

Note if you have more than one Performance selected then this operation is not available

Export to DX Edit Buffer

Exports the Performance currently selected within the active Child Window to the DX Edit Buffer.

Note if you have more than one Performance selected then this operation is not available

Performance Part Editing Features

dx.factory supports the following editing operations upon the **Performance Part Objects** within the Tree View of a Child Window:

- Set Voice
- Initialise
- Cut to Clipboard
- Copy to Clipboard
- Paste from Clipboard

To access all features other than Set (which you do via "Drag and Drop"), right click over a **Performance Part** or selection of **Performance Parts** to activate the **Performance Part 's** Context Sensitive Menu.

Set Voice

If Voices are present in the current file, then a User Voice from the same file can be dragged onto a Performance Part to set the Voice used by the Performance Part.

Please note, the drag operation for this is **COPY** only. You cannot **MOVE** a Voice onto a Performance Part.

Master Patch List

The Master Patch List Dialog is found on the [Tools](#) menu.

This feature is only available if your copy of dx.factory is [registered](#).

The Master Patch List Dialog provides a means for you to generate a single patch list from a list of files. Currently only Cubase Patch Scripts can be generated, but future versions may support other sequencers.

The Master Patch List dialog is shown below:

This dialog has the following options:

File List	The list of files to incorporate into a single patch list.
	If you click on one of the lines then you can edit the file either by typing or by using the *[...]* button to the right of the line to bring up a file selector dialog.
	Note, if you are editing a line, and you are finished, you need to select another line, or press the *RETURN* key for the changes to be stored.
New	Inserts a new line in the file list.
Delete	Deletes the currently selected line in the file list. If no line is selected this control is disabled.
Move Up	Moves the currently selected line in the file list up one line. If no line is selected or the selected line is the first in the list then this control is disabled.
Move Down	Moves the currently selected line in the file list down one line. If no line is selected or the selected line is the last in the list then this control is disabled.
Sort	Sorts the lines into ascending alphabetical order
Cubase	Exports the files identified in the file list to a Cubase format patch script file, which is compatible with Cubase VST/SX/SL/SE.
OK	Closes the dialog.

Generating The Cubase Master Patch List

When you generate a Cubase Patch Script, it is written to the directory specified by the *Cubase Patch Script Directory* field in the [Misc Preferences](#) Tab of the [Preferences](#) Dialog. You can set this field up to export the master patch list directly to the directory read by Cubase upon startup. This directory on my system is *C:\Documents and Settings\Derek\Application Data\Steinberg\Cubase SX 3\Scripts\Patchnames\inactive\yamaha* where *"C:"* is the root drive that Cubase is installed on, *"Derek"* is my Windows user name, aand *"Cubase SX 3"* is my version of Cubase. You will need to vary these according to your system drive and of course your own user name and version of Cubase.

By default the **Application Data** folder is hidden in Windows Explorer, so you may not see this folder first of all. If you cannot see the folder:

1. In Windows Explorer select **Folder Options** from the **Tools** menu and click the **View** tab.
2. Look down the **Advanced Settings** list and find the **Hidden Files and Folders** option.
3. Select the **Show Hidden Files and Folders** sub option.
4. Select **OK** to close the dialog.

Cubase only looks for and reads patch scripts when it starts up, so if you're in Cubase after generating the patch script then exit Cubase and start it up again.

Configuring Cubase to Use the Master Patch List

The patch scipts generated by dx.factory should be compatible with Cubase VST/SX/SL/SE. The instructions given below are for Cubase SX, which is the version I use. Consult your Cubase documentation for how to install patch scripts if you have a different version.

Within Cubase:

1. Select **Midi Device Manager** from the **Devices** Menu.
2. Click on the **Install Device** button.
3. Click on the **DX7 – Master Patch List** option (this is the dx.factory generated file). At the bottom of this dialog, select your output MIDI port that the DX7 is connected to. You can now close this dialog. If you cannot see the **DX7 – Master Patch List** then you have not placed it in the right folder.

This installs the patch list within Cubase and allows you to use it elsewhere within the application.

In the main Cubase screen, select or create a MIDI track that you wish to be used with the DX7. In the **Inspector** window (the panel to the left of the main window) click on the **out** control and you should now be able to see and select the **DX7 – Master Patch List** option in amongst the MIDI ports. Also ensure the MIDI channel number for the track matches the DX7 channel number.

Now when you click in the **Programs** control, just below the **out** control, you'll see a drop down list containing all of the DX7 Voices names generated by dx.factory.

You can now scroll through the lists to find a Voice, an you can also type in filter text to quickly look for a Voice.

Preferences

The dx.factory preferences are accessed via the View menu **Preferences ...** option.

Selecting this option opens a Tabbed dialog with the following tabs which group related parameters:

- Device Type Preferences
- New File Default Preferences
- Performance Preferences
- Check Preferences
- Default View Preferences
- MIDI Preferences
- Miscellaneous Preferences

To view and modify a set of parameters, click on the relevant tab.

Note: The options to update Performances following a Voice move within the same file also apply when Voices are inserted, deleted and sorted.

Note: The options to copy referenced Voices with "parent" Performances work by:

- Checking the destination file to see if the referenced Voice exists
- If it does then the parent Performance is updated after being moved to point to the existing Voice in the destination file
- If not then dx.factory checks to see if a blank or empty Voice is present in the destination file
- If a blank Voice is found then the child Voice is moved or copied and the parent Voice is updated after being moved to point to the new Voice in the destination file
- If no blank Voice is found the dx.factory gives up. Note this may result in a Partial edit (e.g. it may have only been possible to copy a subset of Performances due to the amount of free Voices in the destination file)
- The Voices are only ever copied irrespective of whether the parent Performance is being moved or copied. This is to avoid the problem that would occur when a Voice is moved, where the source Voice (which would have been initialised after the move) is also referenced by other Performances

Device Type Preferences

The Device Type Preferences tab is shown below:

This tab has the following options:

DX Device Type	Allows you to select the type of DX you have from the following options:
	• DX7 • DX7 II
	If this parameter is set to DX7 then new SYSEX files are created that can hold 32 Voices.
	If this parameter is set to DX7II then new SYSEX files are created according to the settings in the New File Default Preferences Tab.

New File Default Preferences

The New File Default Preferences tab is shown below:
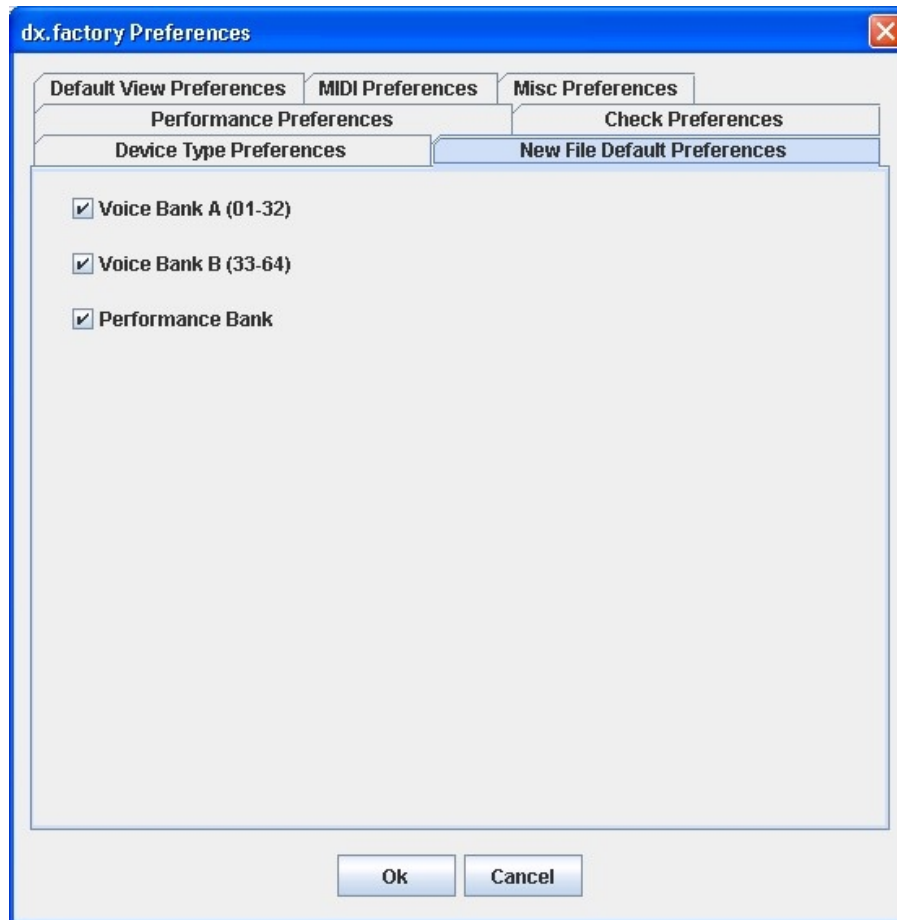
This tab is only enabled if the Device Type is set to DX7II

This tab has the following options:

Voice Bank A (01–32)	When checked the **Voice Bank A** checkbox in the New File Dialog will be initially checked when the Dialog is opened.
Voice Bank B (32–64)	When checked the **Voice Bank B** checkbox in the New File Dialog will be initially checked when the Dialog is opened.
Performance Bank	When checked the **Performance Bank** checkbox in the New File Dialog will be initially checked when the Dialog is opened.

Performance Preferences

The Performance Preferences tab is shown below:
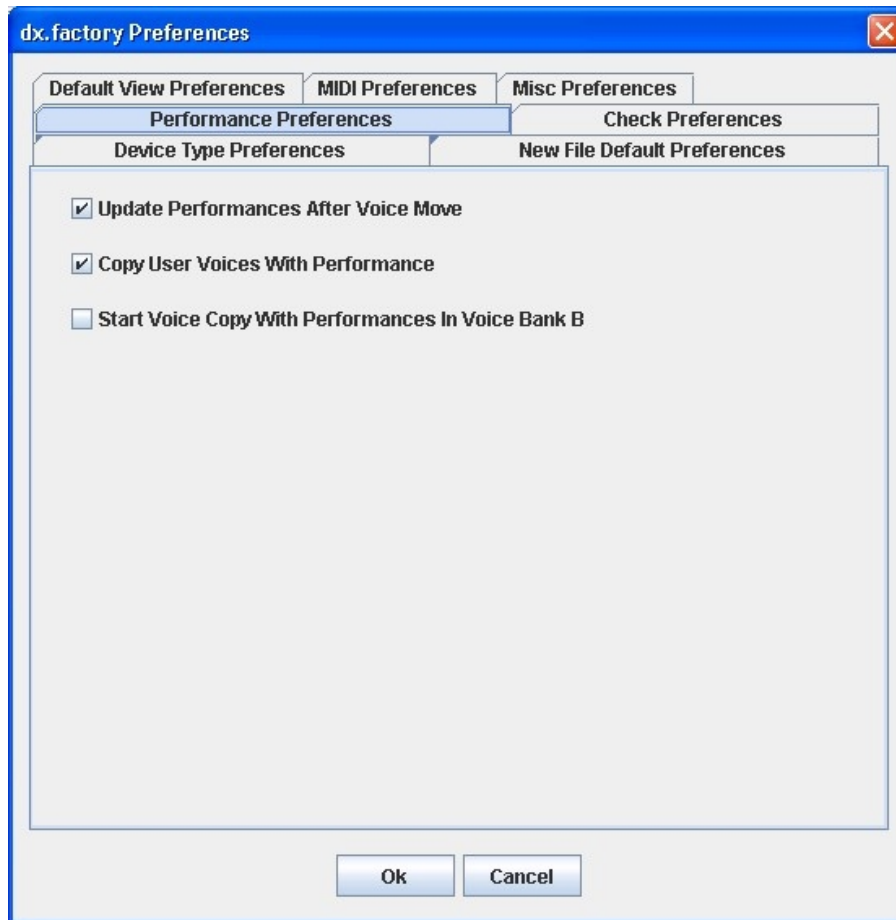
This tab is only enabled if the Device Type is set to DX7II

The options in this tab are only effective in files for a DX7II that have both Voice and Performance banks

This tab has the following options:

Update Performances/Parts After Voice Move	If you move a Voice within an SYSEX file then the Performances and their Parts are updated to ensure that the correct references to User Voices are maintained.
Copy User Voices With Performance	If you move or copy a Performance from an SYSEX file to another SYSEX file, then any User Voices referenced by the Performance and its Parts are also copied to the destination file if the Voices are not already present in the destination file.
Start Voice Copy With Performances In Voice Bank B	If this option is selected then when Voices are copied to a new file along with Performances the Voices are copied into bank B only.

Check Preferences

The Check Preferences tab is shown below:
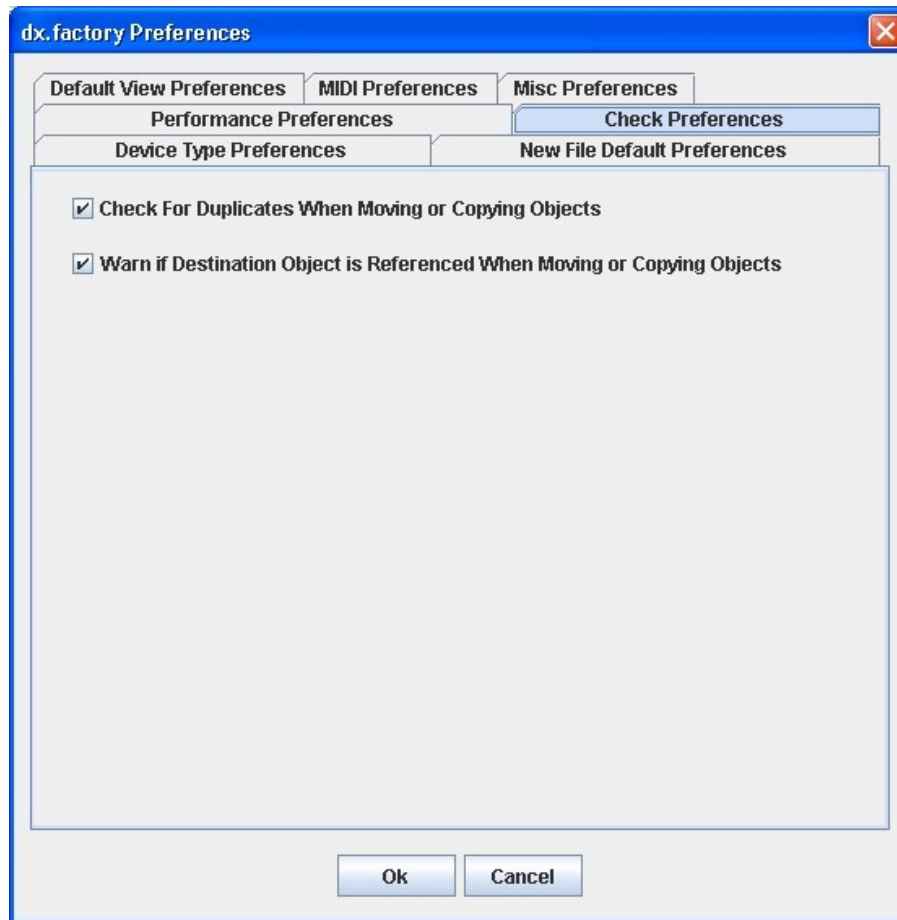
This tab has the following options:

Check For Duplicates When Moving or Copying Objects	If you move or copy an Object to a destination file and the Object already exists then a warning is presented giving you the option to continue or cancel the operation.
Warn if Destination Object is Referenced When Moving or Copying Objects	If you move or copy an Object and it is overwriting an Object that is being referenced, or you are deleting a referenced Object, then a warning is presented giving you the option to continue or cancel the operation.

Default View Preferences

The Default View Preferences tab is shown below:

Default View	Defines the type of view that is applied to a Child Window when it is first opened.
	
	The following options are available:
	
	    • No Split
	    • Horizontal Split
	    • Vertical Split

Pane/Left Pane/Top Pane	Defines the type of view shown in the single pane of an unsplit view, the left pane of a horizontally split view or the top pane of a vertically split view.
	
	The following options are available:
	
	    • Tree View
	    • Table View

Right Pane/Bottom Pane	This control is only visible if the **Default View** option is set to either **Horizontal Split** or **Vertical Split**.
	
	Defines the type of view shown in the right pane of a horizontally split view or the bottom pane of a vertically split view.
	
	The following options are available:
	
	    • Tree View
	    • Table View

View Tool Bar	Controls if the toolbar is visible at startup.
View Status Bar	Controls if the status bar is visible at startup.
View Backdrop In Child Window	This option controls if the image backdrop is displayed in Child Windows. You may wish to turn off this option if you find the scrolling of the Child Window is slow on your machine.

MIDI Preferences

The MIDI Preferences tab is shown below:

This tab has the following options:

Enable MIDI Support	If checked then dx.factory MIDI support is enabled.
Input MIDI Port	Sets the port used for MIDI input from the available ports.
Output MIDI Port	Sets the port used for MIDI output from the available ports.
SYSDX Device Number	Sets the SYSEX device number used for SYSEX transfers. This must match the **Device No** value set in the DX's **MIDI** pages. If the DX **Device No** is set to **all** then it will receive all DX SYSEX messages irrespective of the device number in the message.
Timeout Delay	Sets the time that dx.factory waits for a response from the DX7 before timing out and reporting an error. The value is specificied in milliseconds.
Transmit Buffer Size	Sets the size of the transmit buffer used for sending data to the DX7. Some MIDI interfaces don't like data coming in big chunks and you may need to set this to get a reliable transfer of data. The value is specificied in milliseconds.
Transmit Delay Between Buffers	This sets the delay that dx.factory waits for between sending buffer sized data packets. The value is specificied in milliseconds.
Transmit Delay Between Objects	This sets the delay that dx.factory waits for after sending a complete object. The value is specificied in milliseconds.
Automatically Update DX after Synth Window Edit	When this option is checked, if the DX Synthesizer Window is edited then the edited data will be automatically sent to the DX.
Read DX MIDI Data On dx.factory Startup	When this option is checked the Voices and Performances (if enabled) are read from the DX during the dx.factory startup phase.
Automatically Turn Off DX7II Memory Protection	If you have set the device type to **DX7II** then this option allows you to automatically turn off the DX7II memory protection.
Include Performances In Bulk Transfer	When this option is checked, the Performances are included in bulk transfers. You may wish to uncheck this option if you don't use Performances.
Test DX Midi Settings	

Tests to see if MIDI comms is working using the specified values. The test:

1. Send a Voice Edit Buffer Request message on the specified MIDI output port
2. Waits for a response on the specified MIDI input port. If the response times out an error message is displayed
3. If the Device Type is set to DX7II the a Voice Edit Buffer Supplemental Data Request message is sent to the DX
4. Waits for a response on the specified MIDI input port. If the response times out an error message is displayed

Miscellaneous Preferences

The Miscellaneous Preferences tab is shown below:

This tab has the following options:

Startup Directory	Allows the startup directory to be specified. Note: no validation is performed on this pathname, so please ensure it is valid. I may add validation later.
Cubase Patch Script Directory	Specifies the directory where Cubase patch scripts are written. Note: no validation is performed on this pathname, so please ensure it is valid. I may add validation later. The **[...]** button to the right of the field brings up a dialog that allows you to select the directory instead of typing it in.
Load Last File On Startup	Controls if the last file opened in the previous session is automatically loaded when dx.factory is next invoked.

Online Help

dx.factory provides a full online version of the dx.factory manual.

If you select *Help ...* from the <u>Help Menu</u> or the 🖼 button on the <u>Tool Bar</u>, the Help Window is opened.

The Help Window works just like a web browser window, so its operation should be quite familiar to you.

The left pane of the Help Window shows a tabbed navigation pane to allow you to quickly navigate to a topic, whilst the right hand pane shows the help topic.

The navigation pane can show three different views, depending on which tab you select:

- 🟧   Displays the Table of Contents Navigation Pane, providing a structured list of dx.factory topics
- 📘   Displays the Index Navigation Pane, providing an indexed list of dx.factory topics
- 🔍   Displays the Search Navigation Pane, allowing you to search the help topics for keywords

The Help Window has the following Tool Bar buttons:

- ⬅   Navigates backwards to the last page in the access sequence. If you press and hold the mouse button over this button, you will get a list of accessed pages
- ➡   Navigates forwards to the next page in the access sequence. If you press and hold the mouse button over this button, you will get a list of accessed pages
- 🏠   Selects the home page
- 🔄   Refreshes the current page
- 🖨   Prints the current page
- 🖨   Displays the print settings dialog

Context Sensitive Help

You can access context sensitive help by:

- pressing the your Computer Platform's **Help Key** (**F1** on the PC platform), which will load the help page associated with the Component within the dx.factory [Window](#) that currently has **Focus** (is responding to the keyboard and mouse).
- pressing the ⫷ button on the [Tool Bar](#) and the clicking over the item of interest

You can press the **Help Key** in any dx.factory Dialog to access the relevant help page for the Dialog.

Tips and Tricks

The dx.factory tips and tricks dialog is shown below:
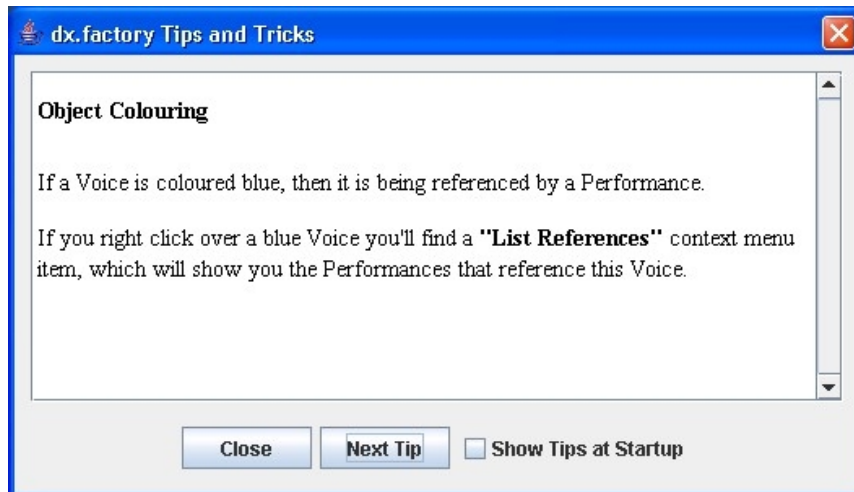
This dialog has the following controls:

Close	Closes the *Tips and Tricks* Dialog
Next Tip	Selects the next tip in sequence
Show Tips at Startup	If checked then when dx.factory starts up, the *Tips and Tricks* Dialog is automatically opened

List of Tips and Tricks

Just in case you want the tips and tricks shown by the dialog as one single list, here they are.

MIDI Support

dx.factory supports the transfer of Voices and Performances between dx.factory and the DX7 via MIDI.

(NOTE: MIDI export features are available only to registered users).

Context Sensitive Help

If you press the *Help Key* (*F1* on a PC) then you can get context sensitive help, including within Dialogs.

Keyboard Shortcuts

dx.factory supports numerous keyboard shortcuts as an alternative to using the mouse.

Take a look in the online help or the dx.factory manual for details of the supported keyboard shortcuts

Object Colouring

If a Voice is coloured blue, then it is being referenced by a Performance.

If you right click over a blue Voice you'll find a *"List References"* context menu item, which will show you the Performances that reference this Voice.

Table Sorting

You can sort Voice and Performance Tables by name by clicking in the Table *Name* Column header.

You can only DRAG COPY Certain Objects

If you are trying to perform a drag operation of a Voice onto a Performance Part and are wondering why dx.factory is not allowing you to perform the drag, you must be holding down the CTRL key during the drag. Holding down the CTRL key turns the operation from a *Drag Move* operation to a *Drag Copy* operation.

Sometimes during a drag operation, the only sensible operaton that can be undertaken is a copy operation.

Copying/Moving Performances to a Different File

When you copy an Performance to a different file then any Voices it references can also be copied at the same time.

I think you'll agree this is a cool feature!

This feature can be off if required within the Preferences Dialog.

Master Patch List

The Master Patch List dialog under the Tools menu allows you to define a list of files that are exported, along with preset voice definitions, as a master patch list for use in supported sequencers to select patchs. Currently only Cubase VST/SX/SE/SL patch lists are supported.

Workspaces

dx.factory allows you to save a Window arrangement as a **Workspace** which you can then recall at a later date.

Moving Voices within a File

When you move a Voice within a file then any Performances that reference the Voice being moved can be updated to ensure they all still reference the correct Voices after the move.

I think you'll agree this is a cool feature!

This feature can be off if required within the Preferences Dialog.

The DX Synthesizer Window

dx.factory has a special window called the DX Synthesizer Window. This is a special window that represents the DX synthesizer itself.

By setting up the MIDI preferences settings you can:

- Automatically import data from the DX synth into this DX Synthesizer Window when dx.factory starts up
- Automatically export data from the DX Synthesizer Wndow to the DX Synth when the data in the DX Synthesizer Window is edited

Exporting Cubase/Protools Patch Lists

You can export Patch lists from SYSEX files for use within either Cubase VST, Protools or Sonar.

The relevant options can be found on the **File** Menu under the **Export** option

The Number After An Operator

In the Tree View you may notice that an operator has a number included after it in brackets. This number is the "checksum" value associated with the operator, and is included as a signature and as a simple way of distinguishing between operators.

DX7II Support

dx.factory allows the creation of SYSEX files that can have any of the following:

- Voice Bank A (01–32)
- Voice Bank B (32–64)
- Performances (01–32)

For example, you could create a SYSEX file that has just Voice Bank B.

Exporting Files to MIDI

You can export a file directly to MIDI once it is opened. If you do this, then the data being exported is also copied to the DX Synthesizer Window.

Importing Files from MIDI

You can import directly from MIDI into a file. If you do this, then the data being imported is also copied to the DX Synthesizer Window.

About dx.factory

The about dialog is shown when the **About ...** option from the <u>Help Menu</u> or the ♥ button on the <u>Tool Bar</u> is selected.
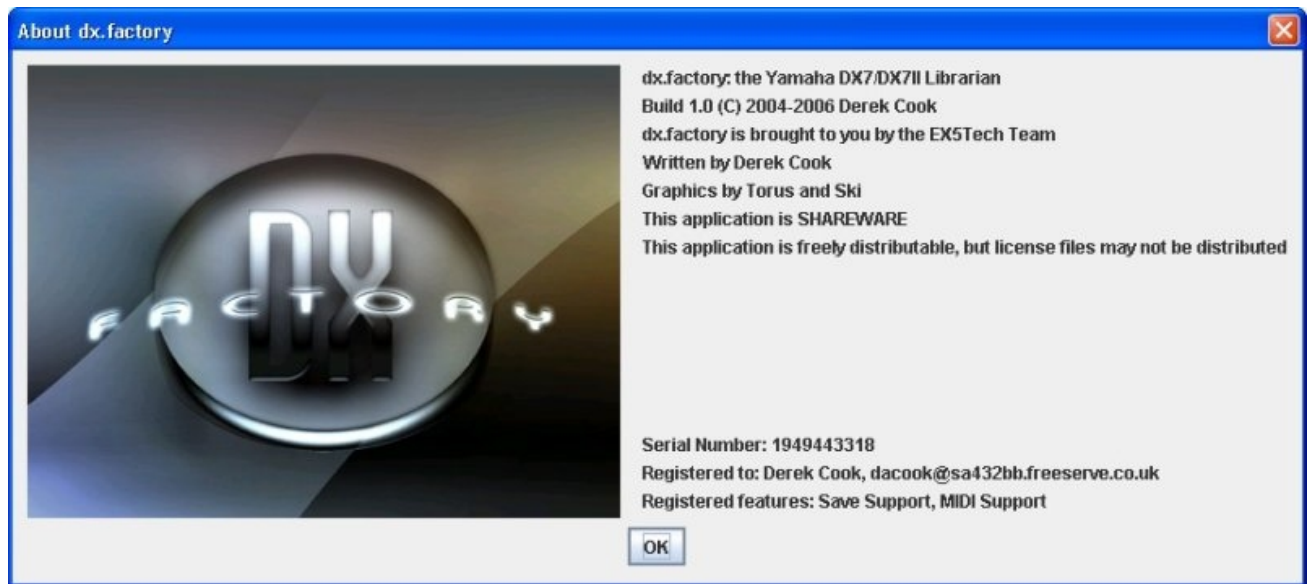
The dialog shows some basic information about the program including the version number and the <u>registration</u> status of dx.factory.

It's also a chance to take a close look at the excellent Splash Graphic provided by Torus!

Glossary

Term	Definition
Child Window	A window associated with an DX data file that you have opened that is used to display the contents of the file. Several **Child Windows** can be open within the dx.factory **Desktop**.
Clipboard	A temporary storage area used for transferring data within a **Child Window** or between **Child Windows**.
Collection	A group of similar and related **Objects**. For example a Voice **Collection** stores the 32 or 64 Voice **Objects** that a file can contain
Context Sensitive Help	The ability of the help system to tailor the help being displayed according to where the user pressed the Help key.
Context Sensitive Menu	The popup menu that is displayed in either the **Tree View** or **Table View** that provides a set of commands specific to the currently selected **Object**
Desktop	The area within the dx.factory window where **Child Windows** can be opened
Drag and Drop	The name for the mechanism that allows a use to move data by dragging it with a mouse and dropping it at a new location.
DRAG MODIFIER	The keyboard key that is held down to turn a Drag and Drop **move** operation into a **copy** operation. On the PC platform, the **DRAG MODIFIER** key is the **CTRL** (control) key
DX Synthesizer Window	A special instance of a **Child Window** that doesn't display data in a file, but which displays User data imported from the DX via MIDI
JRE	Java Run−time Environment. This provides the Java environment which dx.factory needs in order to run. Sun Microsystems provides the JRE for PC systems, and Apple provide their own JRE for MacOS X
MDI	Multiple Document Inteface. The type of user interface used by dx.factory which allows several Windows to be open within the main application window.
Menu Bar	The area of the dx.factory Window that contains the set of menus used for accessing the main functions provided by the application.
MIDI	Musical Instrument Digital Interface. The primary means by which digital data is exchanged in a serial form between synthesizers and computers.
Object	A piece of DX data such as a Voice or Performance.
Plumstone	A MacOS X specific library that provides the means by which external MIDI devices can be accessed with the Java MIDI framework.
Reference	The means by which the DX associates an **Object** (such as a Voice) with another **Object** (such as a Performance Part). The reference provides the link between the two, and in the case of the DX, the link is simply the number of the referenced **Object**.
Regular Expression	A system by which certain character sequences are interpreted not as plain text but as commands that can provide a tailored search for occurences of text
Status Bar	The area of the dx.factory Window that is used to display status information upon the currently selected **Child Window**.
Table View	A **View** which displays data in a file arranged in tablulated rows of data
Tool Bar	The area of the dx.factory Window that contains a set of buttons to provide easy access to commonly used commands
Tree View	A **View** which displays data in a file arranged in a hierarchical tree structure.
View	The means by which the data in a file is viewed. A **Child Window** provides the view upon an DX File that you have opened. The view can be either a **Tree View** or a **Table View**. You can have several views open upno the same data, for example when you have split a **Child Window**.
Workspace	An arrange of the main dx.factory Window and Child Windows which can be saved for subsequent recall.

Keyboard Short Cuts

dx.factory provides many keyboard shortcuts for navigation and performing editing operations.

In general, navigating between components uses these keys:

- **Tab.** Moves keyboard focus to the next component or to the first member of the next group of components.
- **Ctrl−Tab**. Moves keyboard focus to the next component or to the first member of a group of components when the current component accepts a tab (as in text fields, tables, and tabbed panes).
- **Shift−Tab.** Moves keyboard focus to the previous component or to the first component in the previous group of components.
- **Arrow keys.** Move keyboard focus within the individual components of a group of components−−for example, within menu items in a menu or within tabs in a tabbed pane.

The shortcuts are divided into the following categories:

- Keyboard shortcuts for the Desktop and Child Wndows
- Keyboard shortcuts for Tree Views
- Keyboard shortcuts for Table Views
- Keyboard shortcuts for Editing within Tree and Table Views
- Keyboard shortcuts for the Preferences Dialog
- Keyboard shortcuts for Text Editing Fields

Keyboard Shortcuts for the Desktop and Child Windows

Action	Keystroke	Notes
New File	Ctrl−N	
Open File	Ctrl−O	
Save File	Ctrl−S	
Save File As	Ctrl−A	
Save All Files	Ctrl−L	
Open Workspace	Ctrl−ALT−O	
Save Workspace	Ctrl−ALT−S	
Tile Horizontally	Ctrl−H	
Tile Vertically	Ctrl−V	
Maximise Windows	Ctrl−M	
Restore Windows	Ctrl−R	
Minimise Windows	Ctrl−I	
Closes Child Window	Ctrl−F4	
Moves Child Window	Ctrl−F7	
Resizes Child Window	Ctrl−F8	
Minimizes Child Window	Ctrl−F9	
Switch to next Child Window on the Desktop	Ctrl−F6	

Keyboard Shortcuts for Tree Views

Action	Keystroke	Notes
Expands current Object	Right arrow	
Collapses current Object, or moves focus to Parent Object	Left arrow	
Moves focus up one Object	Up arrow	
Moves focus down one Object	Down arrow	
Moves focus to first Object in Tree View	Home	
Moves focus to last Object in Tree View	End	
Moves up one view	Page Up	
Moves down one view	Page Down	
Selects all Object in Tree View	Ctrl–A, Ctrl–/	
Deselects all Object in Tree View	Ctrl–\	
Extends selection down	Shift–down arrow	
Extends selection up	Shift–up arrow	
Extends selection to beginning of Tree View	Shift–Home	
Extends selection to end of Tree View	Shift–End	
Extends selection up one view	Shift–PgUp	
Extends selection down one view	Shift–PgDn	

Keyboard Shortcuts for Table Views

Action	Keystroke	Notes
Moves up one row	Up arrow Shift–Return	
Moves down one row	Down arrow Return	
Scrolls up one view	Page Up	
Scrolls down one view	Page Down	
Moves focus and view to first cell in the current row	Home	
Moves focus and view to last cell in the current row	End	
Moves focus and view to first cell in the current column	Ctrl–Home	
Moves focus and view to last cell in the current column	Ctrl–End	
Allows editing in a Category cell	F2, Down Arrow	
Allows editing in a Name cell.	F2	
Resets cell to the state it was in before it was edited	Escape	
Selects entire table	Ctrl–A	
Extends selection up one row	Shift–up arrow	
Extends selection down one row	Shift–down arrow	
Extends selection to beginning of table	Ctrl–Shift–Home	
Extends selection to end of table	Ctrl–Shift–End	
Extends selection up one view	Shift–PgUp	
Extends selection down one view	Shift–PgDn	

Keyboard Editing Short Cuts for both Tree and Table Views

Action	Keystroke	Notes
Undo	Ctrl–Z	
Redo	Ctrl–Y	
Cut	Ctrl–X	
Copy	Ctrl–C	
Paste	Ctrl–V	
Find	Ctrl–F	
Find Next	F3	
Goto	Ctrl–G	
Insert Object	INS	Not allowed on Collections
Delete Object	DEL	Not allowed on Collections
Rename Object	F4	Single Named Object Only
Initialise Object	F5	
List References	F6	Single Named Object Only
Export to MIDI Edit Buffer	F8	Single Voice or Performance Only
Export to MIDI Memory	Shift–F8	Voices or Performances Only
Import from MIDI Edit Buffer	F9	Single Voice or Performance Only
Import from MIDI Memory	Shift–F9	Voices or Performances Only

Keyboard Shortcuts for the Preferences Dialog

Action	Keystroke	Notes
Navigates through tabs	Arrow keys	
Moves from tab to its associated content pane	Ctrl–down arrow	
Moves from content pane to its associated tab	Ctrl–up arrow	

Keyboard Shortcuts for Text Editing Fields

Action	Keystroke	Notes
Moves insertion point one character to the right	Right arrow	
Moves insertion point one character to the left	Left arrow	
Moves insertion point to beginning of next word	Ctrl–right arrow	
Moves insertion point to beginning of previous word	Ctrl–left arrow	
Moves insertion point to beginning of field	Home	
Moves insertion point to end of field	End	
Submits text entry	Enter, Return	
Extends selection to beginning of line	Shift–Home	
Extends selection to end of line	Shift–End	
Extends selection one character to the left	Shift–left arrow	
Extends selection one character to the right	Shift–right arrow	
Extends selection to next word	Shift–Ctrl–right arrow	
Extends selection to previous word	Shift–Ctrl–left arrow	

Credits

Thanks in general to Ski, Torus, John Westwood (and his wacky humour), Fuse, John Doran, E!, Jim Attfield and many, many others over at EX5Tech for being the most helpful gang of "virtual friends" I have ever known.

Thanks for Yamaha for making such a great range of musical instruments.

The dx.factory PDF documentation file is created from the JavaHelp HTML files using <HTML>DOC This is a great tool that allows me to maintain just one set of documentation files and create both online help and PDF manual formats of the documentation.

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Like all new products, please proceed and evaluate with care, and ensure that all your important data files are backed up before installation and evaluation.

Having gotten that out of the way, if you do encounter any problems, please submit a bug report to [dx7@xfactory–librarians.co.uk](mailto:dx7@xfactory-librarians.co.uk), and I will endeavour to provide a fix for any reported problems.