the national archives

SYSTEM USER GUIDE

PRONOM

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Contents

1.   INTRODUCTION

1.1   Purpose of this Document

This document describes how to use the PRONOM software. Most sections are intended for all end-users of the system; the inclusion of system maintenance details is applicable only to users with maintenance access to the system. To aid system security it is recommended that this section is not made available to all end-users.

1.2   Scope of this Document

This document covers the web-based user interface of the PRONOM software developed for the National Archives.

1.3   Context of this Issue

This is first draft version of the System User Guide for release V3.R1.M12 of the PRONOM software.

1.4   Overview

This document contains the following main sections:

- Section 2 describes the overall user interface presented by PRONOM.

- Section 3 describes the process of creating the five main types of report supported by PRONOM.

- Section 4 details the additional options available to people who are authenticated by the system as having maintenance access to the database.

- Appendix A explains how PRONOM deals with compatibility issues between products and product versions, and discussed migration routes for files stored in old, unsupported formats.

- A Glossary of important terms used is provided.

2. PRONOM USER INTERFACE

PRONOM uses a standard XHTML 1.0 interface (including EMCA 2 script) to allow users to access the system over a web browser.

A typical search screen is shown below. Note that the exact layout and colour scheme may vary as the common look and feel of the The National Archives web site changes over time. The basic structure of the application will however remain the same, and the details in this user guide will remain valid.

Figure 2-1 PRONOM search page
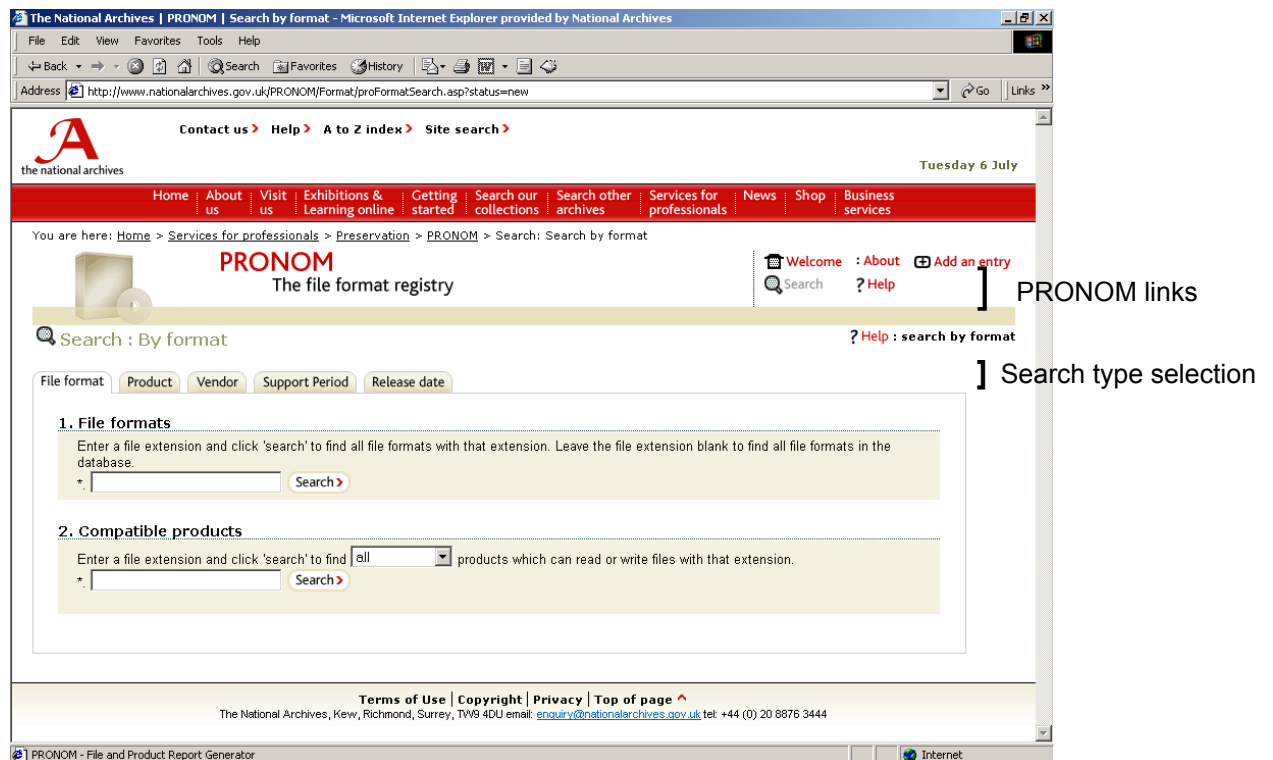
Each page in PRONOM provides the standard TNA navigation bar at the top of the page and footer bar at the bottom of the page. These are common to all web applications on the TNA website and do not provide any PRONOM-specific functionality.

The PRONOM links near the top of the screen allows users to go to the PRONOM home page, to the search pages (defaulting to the File Format search type), or to open the PRONOM help pages in a separate window. These links are available from all pages in the application.

The content of the rest of the page varies depending on the current actions being carried out. For searches, the screen will be as shown above. The search type selection allows the user to choose the type of search they wish to carry out. Each tab provides a simple set of search options, resulting in a different type of search. Reports will be opened in separate windows. These will contain the same navigation bars as shown above.

3. GUIDE TO CREATING REPORTS

3.1 Select a Report to create

PRONOM offers reports on five main types of data, as listed in Table 3-1 below. Reports generated from the user's search will be opened in the same window.

Table 3-1 Types of report which PRONOM can generate

Report Title	Description
File Format	Information on which products can read and/or write a file format that has a specific extension.
Product	Information on particular products.
Vendor	Information on the vendors of software products.
Support period	Information on which versions of a product will or will not be supported on a given date.
Release Date	Information on products, which are currently supported that were released before, after or between specific date(s).

3.2 Creating Reports – General Information

The five PRONOM reports are all generated in the same way. In the search pages, a set of options appears below the menu bar related to the individual report, as shown in

. Selecting the required report option provides fields to enter search terms, and a button to generate the report. Where some report types have different criteria the user can search on, each has their own button for generating a search (see Figure 3-1).

Figure 3-1 A search options page
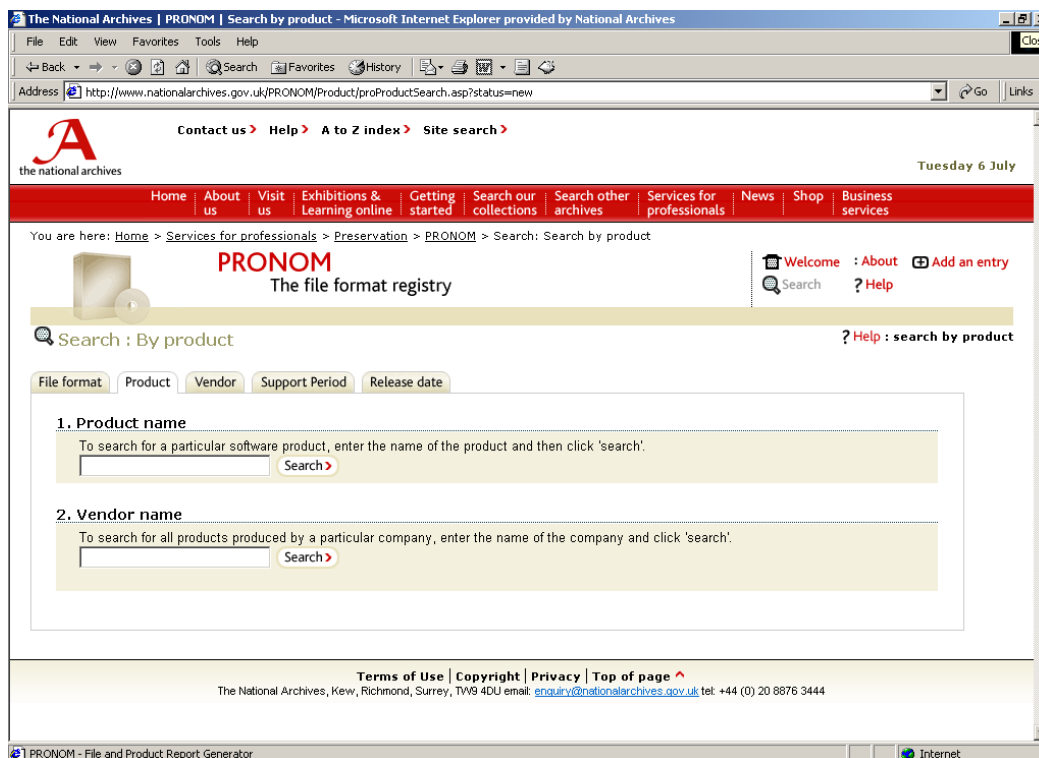
Results from a search are shown in separate browser windows, and are arranged in tabular form. An example of a list of products matching the user's search criteria is shown in Figure 3-2 below.

Figure 3-2 Sample listing of products matching user's search criteria
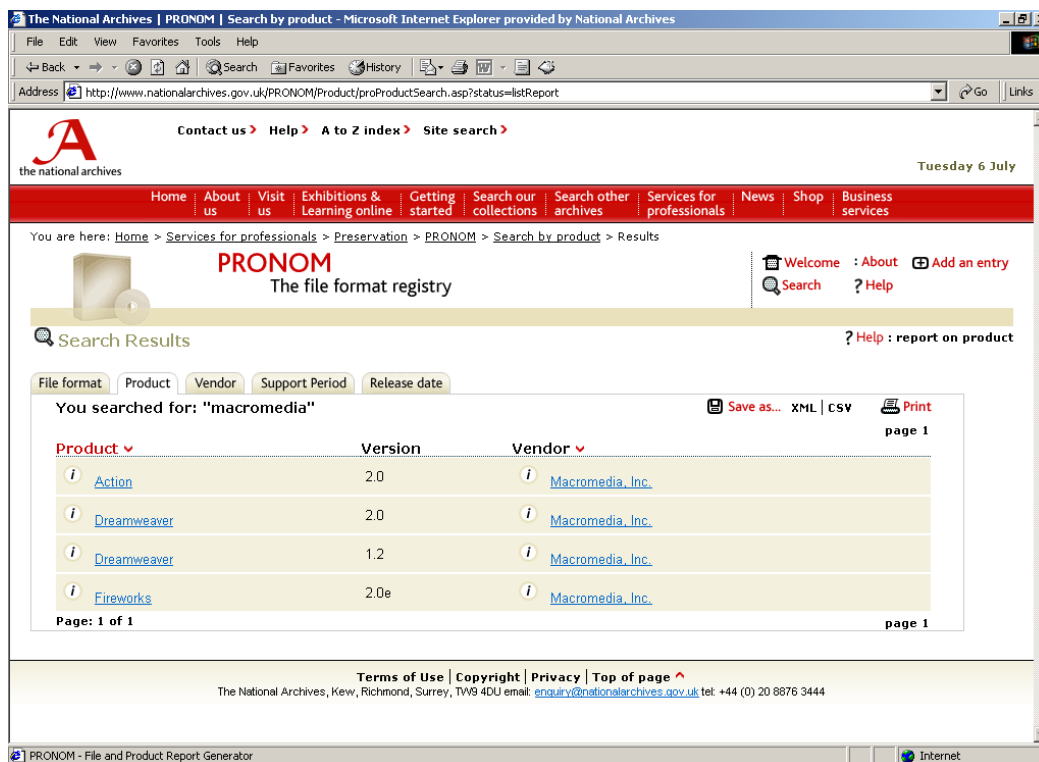
The report will always be sorted on some criteria. Sortable columns will have an icon (ᴗ) in the table header indicating that the user can sort them, and the title of the currently-sorted column will appear in red to indicate which sort is active. Clicking on a sort icon will cause the results to be re-ordered, using that column as the primary sorting criterion. It is not possible to apply user-defined sorting on multiple columns at once – if the user sorts on e.g. Vendor, products will be sorted first by Vendor name and then by product name and product version within each Vendor. The user cannot modify this.

Certain items in a results table may be hyperlinks to more detailed information. In the example shown in Figure 3-2, the user can click on an individual product name to get a detailed report on that product, or on a vendor name for detailed information on that vendor. These reports may again contain links to further information which you can follow if you wish. These more detailed searches will replace the results table in the same window.

Many results listings will take up more than one page on the screen. At the end of each search results page are means to navigate through the pages of the report. Note that the report will revert to the first page if the user changes the sort order, rather than staying on the current page number.

Actions at the top of each report (both lists and detailed reports on a single product or vendor) allow the user to export the report to file, or to generate a printer-friendly version of the report which has simpler formatting for more faithful printed reproduction. Reports can be exported to XML or CSV file formats. (See section 4 for information on additional actions available to administrative user from detailed reports.)

Printing or saving a list report (e.g. when you search for a vendor and are presented with a table of matching results) may give you more detail than that shown on the screen. The saved or printed version is a series of reports on each entry in the table, each containing the same information as a full report on that entry.

The following sections will look at the individual reports in detail. Each of these sections will also contain a recap of the information contained in this section, so that they can act as a complete reference for the creation of each type of report.

3.3 File Format Reports

To begin a File Format report, click on the "File Format" tab from the search screen. You will then be presented with the screen shown in Figure 3-3 below.

Figure 3-3 File Format search page

You can search for file formats which use a specific extension, or for products which can read or write files with a specific extension.

For either type of search, type the extension you want to search for in to the relevant text field, and click "search" to generate the report. For a list of all file formats, leave the extension field blank and click "search". Similarly for a list of all products which can read or write any of the file formats in the database, leave the product extension field blank and click its "search" button. Searches are exact – e.g. entering "rt" would not match formats with extension "rtf", only those of "rt". You do not have to enter the dot (".") before the extension, as it is already visible on the page.

For product searches, choose whether you want to see all of the products which can read or write your file format, or whether to restrict your search to only supported or unsupported products. The drop-down list box contains all three options.

The listing of all matching products or file formats in the database will be displayed. An example of a report on an individual file extension is shown in Figure 3-4 below.

Figure 3-4 Example of a report on a specific file extension

The report lists all file formats which use the extension entered. This includes different versions of the same product.

Figure 3-5 Example of a report on products reading or writing a given extension

The report lists all the different file formats which correspond to the extension you selected, along with the product versions which are able to read or write them. It also tells you the invariance associated with reading in each format, i.e. what effect the process of reading a file into a product version other than that which created it has on the contents of the file. See Appendix A for more detailed information on content invariance.

Clicking on the sort icon ( ) in one of the column headings will cause the table to be re-ordered, sorted by the values in that column – e.g. clicking on "Release Date" causes a table to be re-ordered in the order the product versions it contains were released.

If the list spans several pages, the bottom of the page below the table will have links to allow you to move to other pages of the report. Click on a page number to go directly to that page, or click on the "Previous" and "Next" arrows to move through the pages in turn.

To save any of these reports to a file or to print them out, click the appropriate link which appears at the top of the table.

A File Format report can also be used in combination with product reports to plan a migration route for a file stored in an old, unsupported or obsolete format. For more details and an example of this, see Appendix A.

3.4   Product Reports

To start a Product report, select the "product" tab from the search screen. You are then presented with the screen shown in Figure 3-6 below

Figure 3-6 Product search page

You can search by product name, to find details of specific products, or by vendor name, to find all products produced by specific vendors.

For either type of search, type the term you want to search for into the relevant text field, and click "search" to generate the report. For lists of all products, leave the product name field blank and click "search". Otherwise, enter some text into the field and click "search" to find all products whose names include the value you typed. E.g. entering "pro" would match all products which have "pro" somewhere in their name – not necessarily at the start. If you are searching for a single product, enter as much of its name as possible to limit the chances of matching against other products. Note that version numbers are recorded in a separate field, so you should not include them in a search by product name.

For lists of all products from all vendors, leave the vendor name field blank and click "search". Otherwise, enter some text into the field and click "search" to find all products from all vendors whose names include the value you typed. E.g. entering "micro" would match all products that are produced by vendors whose names have "micro" somewhere in their name. Entering a search for vendor will clear the product name search.

Pressing the Enter key after typing your search term will generate the report in the same way as pressing "search".

The report of all matching products from the database will be displayed. An example of this is shown in Figure 3-7 below.

Figure 3-7 Example of a product report

Clicking on the sort icon (⌄) in one of the column headings will cause the table to be re-ordered, sorted by the values in that column – e.g. clicking on "Vendor"

causes the table to be re-sorted into alphabetical order by vendor name (rather than e.g. product name).

If the list spans several pages, the bottom of the page below the table will have links to allow you to move to other pages of the report. Click on a page number to go directly to that page, or click on the "Previous" and "Next" arrows to move through the pages in turn.

If you would like a detailed report on one of the products listed, click on the product's name in the list (or click on a vendor name to get detailed information on that vendor). An example of a detailed product report is shown in below.

Figure 3-8 An example of a detailed product report (top of page)
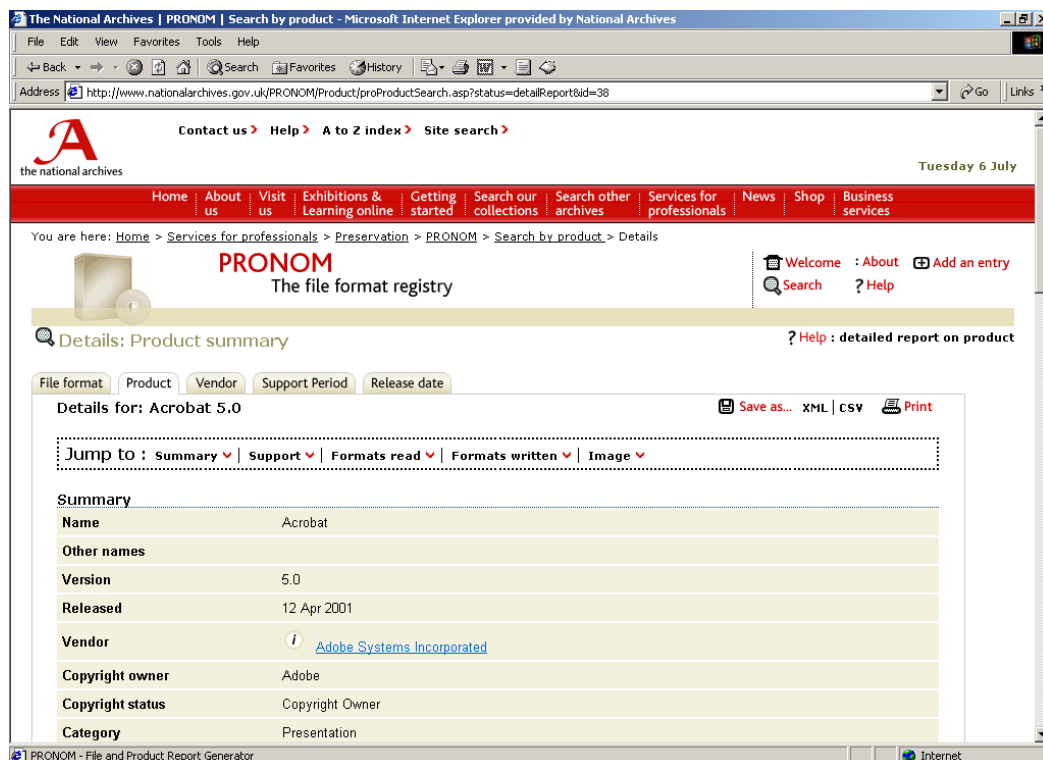
The information in the report is divided into different sections. You can browse through these sections by clicking on a section link in the "Jump to" menu at the top of the page, or by scrolling down.

As with all reports, underlined links to further information are provided, such as a links to a detailed report on the product's vendor. Click on one of these links to go straight to that report.

To save any of these reports or listings to a file or to print them out, click the appropriate link which appears at the top of the table.

3.5 Vendor Reports

To generate a Vendor report, select the "Vendor" tab from the search page. You are presented with the screen shown in Figure 3-9 below.

Figure 3-9 Vendor search page
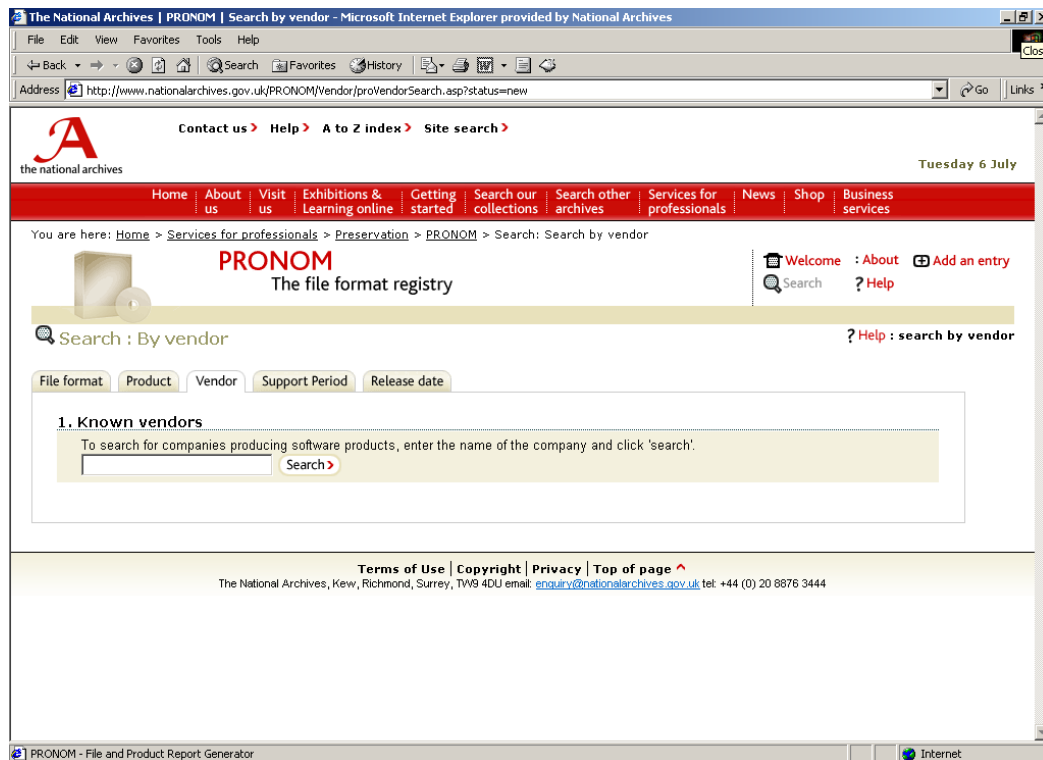
You now need to enter the vendor you wish to search for. Leaving the text field blank and pressing "search" will search for all vendors. Entering text and pressing "search" will search for all vendors whose name includes the value you typed. E.g. entering "micro" would match all vendors who have "micro" somewhere in their name – not necessarily at the start. If you are searching for a single vendor, enter as much of their name as possible to limit the chances of matching against other vendors.

Pressing the Enter key after typing your search term will generate the report in the same way as pressing "search".

The report listing all matching vendors from the database will be displayed. An example of this is shown in Figure 3-10 below.

Figure 3-10 Report containing a list of vendors

Clicking on the sort icon (⌄) in one of the column headings will cause the table to be re-ordered, sorted by the values in that column – e.g. clicking on "Still Trading" causes the table to be re-sorted according to whether a vendor is still trading or not.

If the list spans several pages, the bottom of the page below the table will have links to allow you to move to other pages of the report. Click on a page number to go directly to that page, or click on the "Previous" and "Next" arrows to move through the pages in turn.

If you would like a detailed report on one of the vendors listed, click on their name in the list, or to visit their website (if applicable) click on the link in the table. An example of a detailed vendor report is shown in Figure 3-11 below.

Figure 3-11 Example of a detailed vendor report (top of page)

As with all reports, further underlined links are provided, such as a link to the vendor's web site and a link to send them an email.

To save any of these reports or listings to a file or to print them out, click the appropriate link which appears at the top of the table.

3.6   Support Period Reports

To begin a Support Period report, click on the "Support Period" tab from the search page. You will then see the screen shown in below.

Figure 3-12 Support Period search page

You can now choose your options for creating the report. There are two options – look at products which are/will be supported on a given date, or look at products which will not be supported on a given date. Simply enter the date into the relevant fields and then click "search" to generate the report. Dates must be entered in the format DD-MMM-YYYY, e.g. 25-JAN-2002.

Pressing the Enter key after typing your date will generate the report in the same way as pressing "search".

The listing of all matching product versions from the database will be displayed. An example of this is shown in Figure 3-13 below.

Figure 3-13 Example of a support period list report

Clicking on the sort icon (⌄) in one of the column headings will cause the table to be re-ordered, sorted by the values in that column – e.g. clicking on "Vendor" causes the table to be re-sorted into alphabetical order by vendor name.

If the list spans several pages, the bottom of the page below the table will have links to allow you to move to other pages of the report. The current page is highlighted in the list of pages. Click on a page number to go directly to that page, or click on the "Previous" and "Next" arrows to move through the pages in turn.

If you would like a detailed report on one of the products (or vendors) listed, simply click on their name in the table to go straight to the report.

To save any of these reports or listings to a file or to print them out, click the appropriate link which appears at the top of the table.

3.7   Release Date Reports

To create a Release Date report, click on "Release Date" from the menu bar across the top of the screen. You will then see the screen shown in Figure 3-14 below.

Figure 3-14 Release Date search page

The Release Date reports allow you to see which products were released before or after a given date, or between two given dates. Dates are entered in the format DD-MMM-YYYY, e.g. 25-JAN-2001.

To see products released before or after a given date, first choose "before" or "after" from the drop down list box. Then enter the date you require in the text box, and click "search". To see supported products released between two given dates, enter the dates you require into the pair of date fields and click "search." The second date must be on or after the first date.

The listing of all matching products from the database will be displayed in a separate browser window. An example of this is shown in Figure 3-15 below.

Figure 3-15 Example of a release date report listing

Clicking on the sort icon (⌄) in one of the column headings will cause the table to be re-ordered, sorted by the values in that column – e.g. clicking on "Vendor" causes the table to be re-sorted into alphabetical order by vendor name.

If the list spans several pages, the bottom of the page below the table will have links to allow you to move to other pages of the report. Click on a page number to go directly to that page, or click on the "Previous" and "Next" arrows to move through the pages in turn.

If you would like a detailed report on one of the products (or vendors) listed, simply click on their name in the table to go straight to the report.

To save any of these reports or listings to a file or to print them out, click the appropriate link which appears at the top of the table.

4.   DATABASE MAINTENANCE ACCESS

If you require maintenance (administrator) access to the database, you must enter http://*server_name*/PRONOM/Maint/proMaintenance.asp into the address bar of your web browser (where *server_name* is the name of the server on which the web pages are hosted). You will then be asked to enter your username and password (unless you are logged on with an NT account which already has maintenance access). If the system recognises you as having maintenance access, you will be presented with the Maintenance screen shown in Figure 4-1 below. If you were successfully logged on then you will be able to re-access the maintenance pages by going to the above URL – you will not be asked to re-enter your password unless you have closed the browser.

Figure 4-1 Maintenance Introduction page
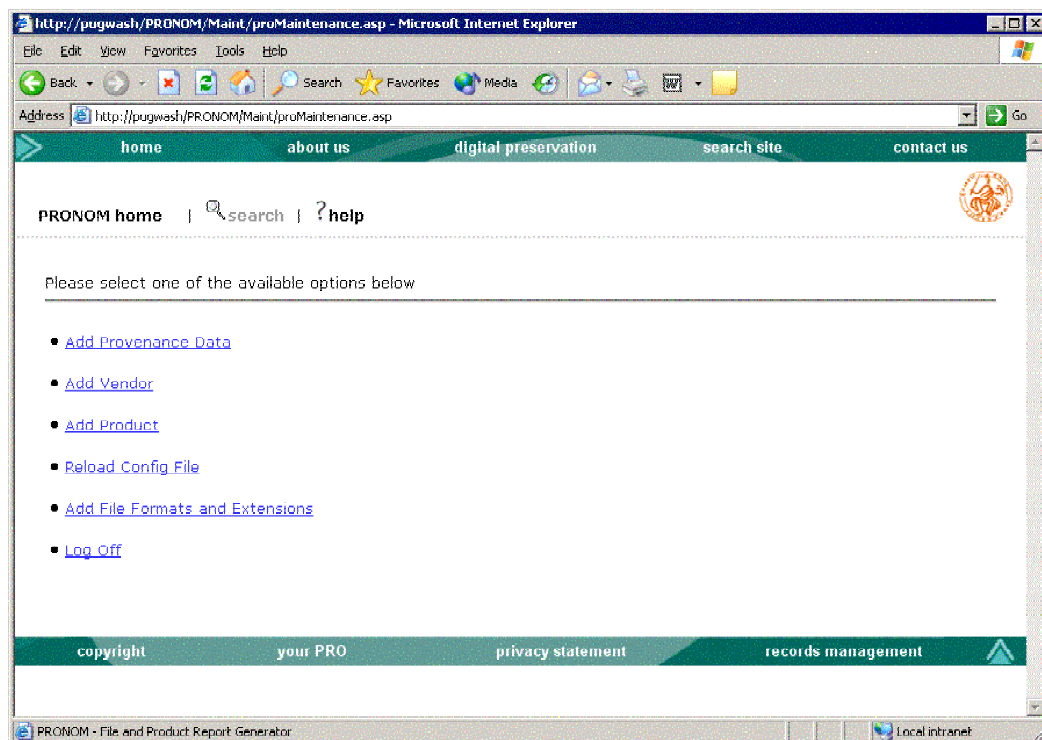
4.1   Adding New Provenance Source Records

To add a new provenance source record to the database simpy click the link 'Add Provenance Data' provided on the maintenance screen (Figure 4-1). You will then see the data entry screen shown in Figure 4-2 below.

Figure 4-2 Add Provenance Data page

Some of the fields require the user to enter text into a text box while others require an entry to be selected from a list box. Only the provenance source name has to be completed – all other fields can be left empty. A message box will appear if the provenance source name field is not completed.

When you have finished filling out the form and are happy with what you have entered, click "Add Provenance" to enter the new record into the database. To leave this screen without adding the record, click the "Cancel" button.

4.2   Editing Provenance Source Records

Once you have been identified by the system as having maintenance access (see section 4 above) you will see extra options while viewing reports. An example of a Vendor report viewed by a user with maintenance access is shown in Figure 4-5 below. Provenance records are edited by assigning a provenance source to either a product or a vendor through the Edit Product or Edit Vendor screens respectively (see sections **Error! Reference source not found.** and **Error! Reference source not found.**) and then clicking the link entitled 'Edit provenance data' beneath the provenance input boxes.

Clicking the link to Edit Provenance Data will bring up a window similar to the one shown in Figure 4-3. This screen allows you to edit the record you were viewing in a similar manner to "Add Provenance". When you are happy with your changes, click "Submit" – this will update the old record with the changes you have made. To exit this screen without saving any changes, click the "Cancel" button.

Figure 4-3 Edit Provenance Data page

A link is also provided to Add provenance data. This works in a similar manner to the Edit Provenance screen. The Add Provenance Data screen is displayed in a new window.

4.3 Adding New Vendor Records

To add a new vendor to the database simply click the link "Add Vendor" provided on the Maintenance screen (Figure 4-1). You will then see the data entry screen shown in Figure 4-4 below

Figure 4-4 Add Vendor page

Some of the fields require the user to enter text into a text box while others require an entry to be selected from a list box. Only the vendor name has to be completed – all other fields can be left empty. A message box will appear if the vendor name field is not completed.

When you have finished filling out the form and are happy with what you have entered, click "Add Vendor" to enter the new record into the database. To leave this screen without adding the record, click the "Cancel" button.

4.4 Editing and Deleting Vendor Records

Once you have been identified by the system as having maintenance access (see section 4 above) you will see extra options while viewing reports. An example of a Vendor report viewed by a user with maintenance access is shown in Figure 4-5 below.

Figure 4-5 Detailed Vendor report viewed by user with Maintenance access.
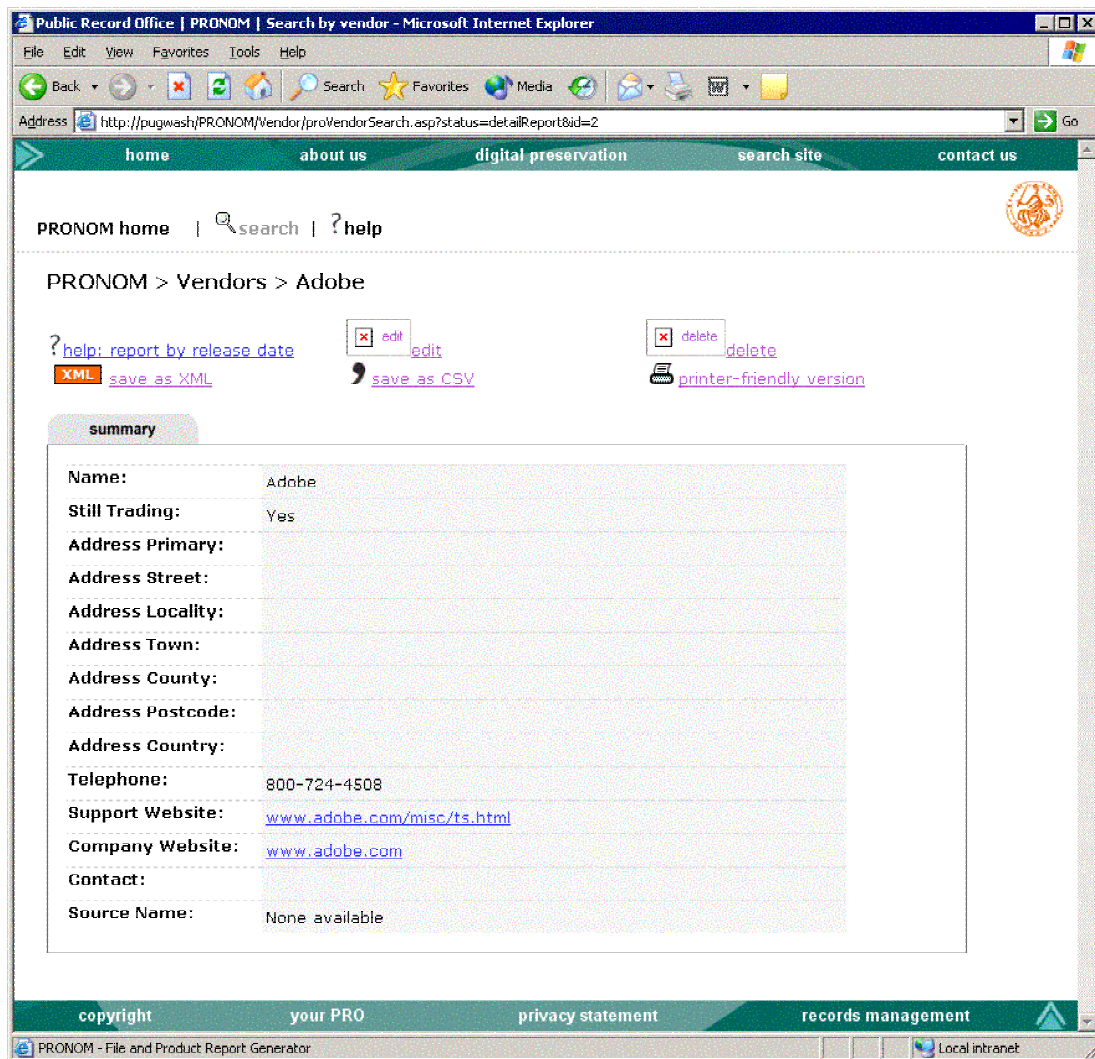
There are two extra links available at the top of the report – "edit" and "delete".

Clicking "delete" will ask for confirmation, and if confirmed will permanently delete the record from the database. Note that you should first delete any products released by that vendor.

Clicking "edit" will bring up a screen similar to the one shown in Figure 4-6 below.

Figure 4-6 Edit Vendor page

This screen allows you to edit the record you were viewing in a similar manner to "Add Vendor". When you are happy with your changes, click "Submit" – this will update the old record with the changes you have made. To exit this screen without saving any changes, click the "Cancel" button.

4.5 Adding New File Format Records

To add a file format to the database simply click the link "Add File Format and Extensions" provided on the Maintenance screen (Figure 4-1). You will then see the data entry screen shown in Figure 4-7 below.

Figure 4-7 Add File Format and Extensions page

To add a new file extension, enter it in the "new extension" text box and click "Add". If this file extension already exists, then a message will appear containing this information otherwise the extension will be entered.

To add a new file format for an existing file extension or one entered in the step above then enter the file extension in the extension text box on the lower half of the screen. Click ">>" to see a list of file types matching the extension entered. If no file types match the extension entered a message will appear informing the user of this.

If the file type required is not present in the list then a new file type for the extension can be entered by adding the file type description to the text box at the bottom of the screen and clicking "Add". A message will then be displayed containing the information as to whether the file type was successfully added or not.

4.6 Adding New Product Records

Note: Before adding a product to the system, ensure that any file formats, extensions, vendors and support vendors that are required for the new product have already been entered as described in the preceding sections.

To add a product to the database click the link "Add Product" on the Maintenance introduction screen as shown in Figure 4-1. The new product data entry screen will then be displayed as shown in

Figure 4-8 and Figure 4-9 below.

Figure 4-8 Add Product page (top)

Figure 4-9 Add Product page (bottom)

Some of the fields require the user to enter text into a text box while others require an entry to be selected from a list box. All fields which require entry are marked with two asterisk characters. A message box will appear if any of the mandatory fields have not been completed.

The screen is composed of five sections – basic product details, vendors and support, file formats read, file formats written and product images.

- Stage 1 - Basic product details are completed by typing input into text boxes or selecting an option from a list box.

- Stage 2 - The vendors that produce and support the software are entered as follows. In the vendor name text box, enter part of a vendor name and click ">>". The list of vendors matching the search string will be displayed. Select a vendor. If the vendor is the producer of the software then click "Product

Vendor". If the vendor supports the software click "Primary Support". If the vendor provides third party support for the software click "3rd Party Support". The name of the vendor should then be transferred to the corresponding text box. If an incorrect vendor is selected, simply select another one and click the corresponding button.

- Stage 3 – Entering the file formats that the product reads is performed as follows. Enter the extension of the file type that the product is to read and click ">>". A list of file formats with that extension should be displayed in the list box. Select a file format from the list box. Depending on the product invariance to read that particular file format, click one of the following buttons; "Unchanging content", "Stable Content", "Content Altered" or "Unknown Invariance". Descriptions of file format invariance is provided in Appendix A. The file format should then be transferred to the list box on the right. To remove a file format from the list that the product reads, select the file format from the list and click the "Remove" button.

- Stage 4 – Entering the file formats that the product writes is performed as follows. Enter the extension of the file type that the product is to write and click ">>". A list of file formats with that extension should be displayed in the list box. Select a file format from the list box then click the "Add button". To remove a file format from the list that the product writes, select the file format from the list and click the "Remove" button.

- Stage 5 – Adding images to the product is performed as follows. Use the file browse control to find an image file which you want to attach to the product. Add a description for the image – this will be used as alternative text in the user's browser when the image is displayed. When you save the product, this image will be stored in the database.
  Existing images for this product will also be displayed. Their descriptions can be updated directly, or the image can be removed from the product's record by marking that image for deletion using the checkbox at the end of that image's row.

- When you have finished filling out the form and are happy with what you have entered, click "Add Product" to enter the new record into the database. To leave this screen without adding the record, click the "Cancel" button.

4.7 Editing and Deleting Product Records

An example of a Product report viewed by a user with maintenance access is shown in Figure 4-10 below.

Figure 4-10 Detailed Product report viewed by user with Maintenance access
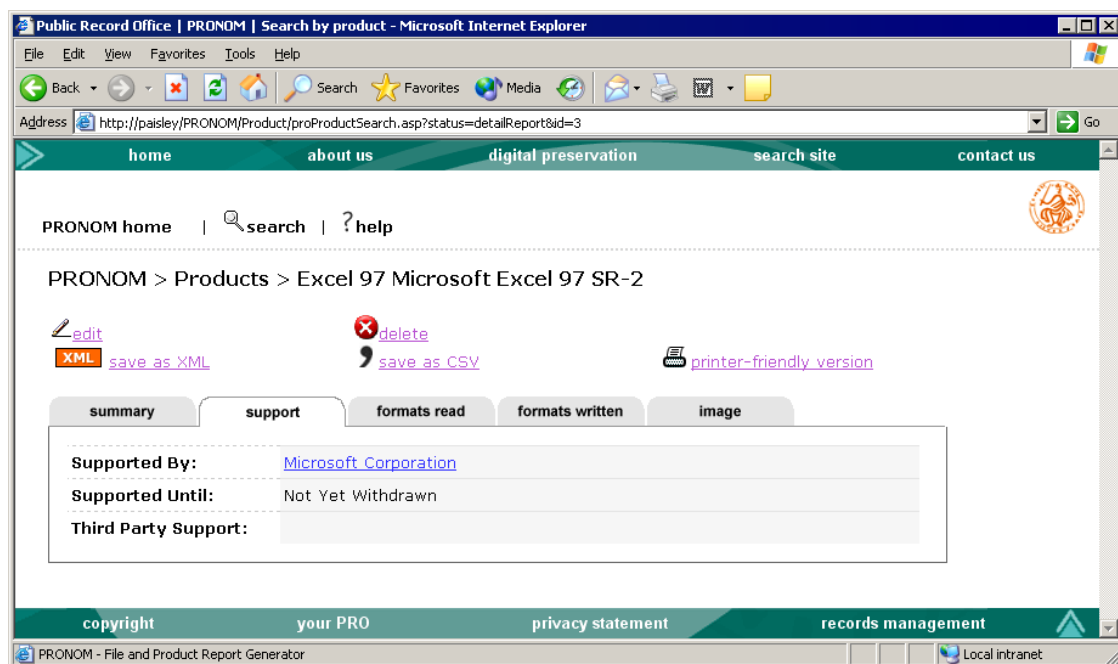
There are two extra links available at the top of the report – "edit" and "delete".

Clicking "delete" will permanently remove the record you are currently viewing from the database following a confirmation prompt.

Clicking "edit" will bring up a screen similar to the one shown in Figure 4-11 and Figure 4-12 below.

Figure 4-11 Edit Product page (top)

Figure 4-12 Edit Product page (middle)

Figure 4-13 Edit Product page (bottom)

This screen allows you to edit the record you were viewing in a similar manner to the "Add Product" screen. When you are happy with your changes, click "Submit" – this will update the old record with the changes you have made. To exit this screen without saving any changes, click the "Cancel" button.

4.8 Reloading the Configuration

The Web application loads two configuration files into memory when it starts – its own configuration and a configuration for the PRONOMAccess component. The latter contains the details of the reports that the system can generate. The first details the files that are required by the web application. If any of these files are changed they can be reloaded into the application using the following procedure (which requires maintenance access).

Navigate to the Maintenance screen, as described at the start of section 4 above.

Click on the "Reload Config".

The configuration should be reloaded without the need to restart the web server.

Appendix A: How PRONOM handles Compatibility Issues

Every product version in the PRONOM database has two lists of file formats associated with it. (A file format is more specific than an file extension, e.g. the extension "doc" is used by many versions of Microsoft Word, earlier versions of which may not be able to read files written by later versions.) The first list associated with each product version is a list of file formats that it can write. The second is a list of file formats it can read, and the content invariance associated with the process of reading this file format.

Content invariance is the degree to which the contents of an electronic resource (file) could change when read by software other than the software that created it. The possibilities are:

- **Content Altered:** the software alters the actual content of the resource

- **Stable Content:** the content remains the same but the display, formatting, layout, print etc is different.

- **Unchanging Content:** Content, display and print all remain the same.

The information provided in PRONOM can be used to answer the two most common questions on the subject of product compatibility:

1. "I have a file of extension *.abs and want to know what product versions can read (or write) it, and what effect using these products to read it will have on the contents of the file."

2. "I want to know what files this version of this product can read (or write) and what effect it has on the content of the files when it reads them".

Question 1 can be answered by running a File Format report based on the file extension you are interested in. Question 2 can be answered by running a Product report on the product version you are interested in and looking at the lists of files it can read and write.

A third, more complicated use for PRONOM's compatibility information is the plotting of a **migration route** for a file in an old format into a more recent one.

A simple example of this is as follows. You have a file with the extension *.abs which was created in an old product which is no longer supported. You would therefore like to convert this file into a newer, supported and more accessible format. The solution is to first run a File Format report on *.abs files (restricted to show supported products only), resulting in a list of products which can read in files of this type. Click on the "Release Date" column heading to display the results in the order they were released. You can now look at the more recent products and choose the one, which has the best content invariance, ideally "Unchanging Content". Now you can load your *.abs file into your chosen product and save it in the new product's native format (or any other format it can write) – the migration is complete. Before doing this, you might first want to look at a Product Report on the version you are interested in to see what other formats it can read and write, how much longer it will be supported for (if known), etc.

Not all migration routes will be a simple single step process as described above, but this example shows how using a combination of File Format and Product reports for each step can be used to build up a very complicated migration route. For example, a two-step process could be to convert a very old *.abs file into a *.xyz file using Product A (a more recent but still unsupported product) and then convert the *.xyz file into a *.par file

using Product B (a more recent, supported product and format). All the information required to do this can be found in File Format and Product reports, and you will know via content invariance what effect each step will have on the contents of the file.

Glossary of Terms

Content Invariance

The degree to which the contents of an electronic resource could change when read by software other than the software that created it. See Appendix A.

CSV

Comma Separated Values. A format for data exchange across different platforms and applications. The data is stored as a string of values separated by commas.

Migration Route

The steps needed to convert a file from an old format into a more recent one. For example, moving a file created with an old product that is no longer supported to e.g. Microsoft Word .doc format. This could be one step or several. See Appendix A for more details.

SUG

System User Guide. A document, such as this, which describes how to use a system.

Supported

A product is classed as "supported" if the vendor (or third-party provider of support) has not published a date at which technical support will cease, or if such a date is still in the future.

XML

eXtensible Markup Language. A format for storing structured information such that it can be read and processed easily across different platforms and applications.