

## Chapter 10

# Advanced Reporting Utility (ARU)

## Producing a Job Report

The PlotWorks Advanced Reporting Utility (ARU) function is used to generate job reports. The ARU is an ASCII text log, containing information about each file printed. The ARU records information like the time a job is printed, the media used, the name of the client, plus much more. The ARU can be imported into a spreadsheet or database program where the data can then be compiled to meet the organizations needs. For example a report can be generated to determine the average amount of each media used. Invoices can also be created for billing purposes.

ARU logs are generated by the Printer Interface, the Scanner Interface, and the Publisher. The Printer Interface records details on each job printed. The Scanner Interface records information on each job scanned and the Publisher records information on each job viewed or sent for print. An ARU report can also be created for the Output to File function that is available from the Job Editor or Job Queue.

The ARU logs are not created till the first document is printed, scanned or viewed depending upon the type of log discussed.

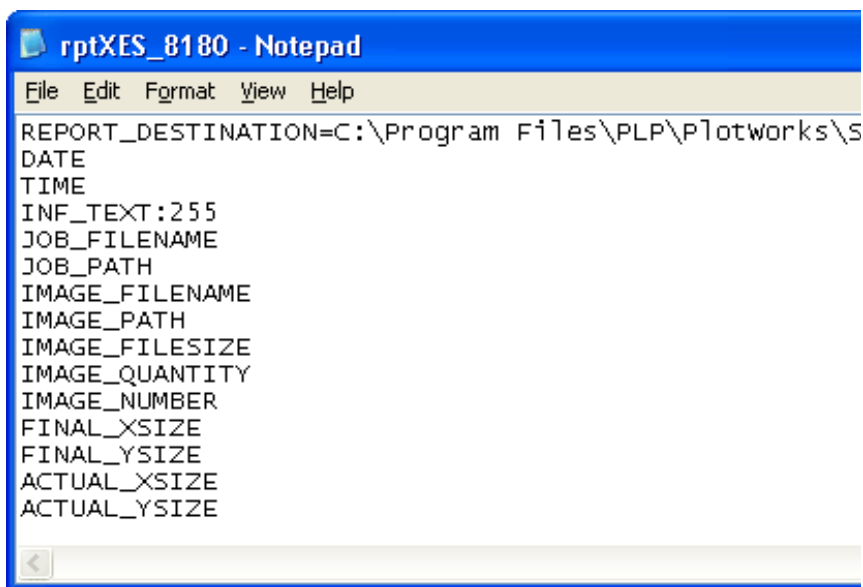
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## Specifying what Data the ARU Log Collects

Data collected by the ARU is determined by data fields that are specified in the DEF file. The Printer Interface, Scanner Interface, and Publisher software each have a related DEF file. The DEF file always has a prefix of “rpt” and has the .def file extension. For example the DEF file for the XES 8180 printer is named, rptXES\_8180\_1.def. The “\_1” indicates that it is the 8180 printer that is specified as Device 1 in the Printer Interface, General Configuration window.

The DEF file for Output to File is named rptPublisher.def.

*Fig 10.1  
DEF file  
open in  
Notepad*



When the PlotWorks software is first installed, the provided DEF files contain all applicable data fields. To limit or specify what data is collected in the ARU log you can edit the DEF files.

In Figure 10-1 the second data field is **DATE**. This data field records what date each file is printed. A list of data fields available, and how these can be used is provided later in this chapter.

### Editing the DEF File

**To edit the DEF file:**

1. Open a text editor like Windows **Notepad**.
2. Click on the **File** menu.

3. Select the **Open** menu item. The Open dialog box appears.
4. Browse to the **PlotWorks** folder. This is usually located in **C:\Program Files\PLP\Plotworks**.
5. Select the DEF file you need to edit.
6. Click on the **Open** button. The DEF file opens in your text editor application.
7. The first line of the DEF file contains the data fields, `REPORT_DESTINATION`. This data field is used either to specify a:
  - log file and path to use. In Figure 10-1 we specify the `ARUdefault.log` file. Edit the first line to use a different log file, or path. We recommend you specify a new log file if you intend to edit the data fields list as specified in step 8. The log file does not have to already exist. It is created the first time required. The syntax for this is  
`REPORT_DESTINATION=<filename and path>`  
For example, `REPORT_DESTINATION=C:\Program Files\PLP\Plotworks`
  - a printer port to print job details. The syntax for this is:  
`REPORT_DESTINATION= <printer port>`  
For example, `REPORT_DESTINATION=LPT1`
8. The data fields list continues on the second line of the DEF file. Edit this list as needed. Keep in mind that each application (Printer Interface, Scanner Interface, and Publisher) can use only its specified DEF file. So this file must contain data fields for all the data you want to collect.
9. Save and close the text editor ensuring you did not change the DEF file name. The new log generated will only contain data for the specified data fields.

## ARU Data Fields

Some data fields allow the user to limit the data size of values added to the log. This is done by adding a colon (:) after the data fields. For example: `JOB_PATH:255` indicates that only the first 255 characters of the job path are added to the log file. This functionality is provided in case you need the ARU output to fit a specified form or a database field.

Most of the data fields are optional and the order in which they are listed in the DEF file is the order the data is listed in the log file.

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Below are tables containing data fields that can be specified in the DEF files.

<b>Data field</b>	<b>Description</b>
REPORT_DESTINATION	This data field is required. It is used to specify a full path and filename for the log file or to specify a printer port to print the job details.

Data field	Description
DATE	<p>This enters the date the job is printed to the log or print file. The default date format is Month/Day/Year (MM/DD/YYYY). You can specify a format for the date values using the following construct:</p> <p><b>DATE= “your specifiers”</b></p> <p>Replace the text “specifiers: with one or more of the format specifiers listed below. For example:</p> <p>DATE= “m/d/y” gives 10/21/1999</p> <p>DATE= “A/B d y” gives Thursday, October 21 1999</p> <p><b>Date Format Specifiers:</b></p> <ul style="list-style-type: none"><li>• <b>d</b> or <b>D</b> provides the day as a number between 0-31</li><li>• <b>m</b> or <b>M</b> provides the month as a number between 1-12</li><li>• <b>y</b> or <b>Y</b> provides the year with the century</li><li>• <b>j</b> provides the day of year as a number between 1-366</li><li>• <b>a</b> provides the abbreviated weekday name</li><li>• <b>A</b> provides the full weekday name</li><li>• <b>b</b> provides the abbreviated month name</li><li>• <b>B</b> provides the full month name</li><li>• <b>x</b> provides the date customarily used in the current locale</li></ul> <p>These specifiers can be used in any order, with any character as a separator. Specifying multiple M’s, D’s or Y’s, or their lower case equivalents will produce the same format. For example, specifying mm, M, MM, m or Mm will provide the same output. Same for the D’s and Y’s</p>

<b>Data field</b>	<b>Description</b>
TIME	This records the time that the job was printed, in 24-hour format.
INF_TEXT	This records the text from the job information (.INF) file if one was sent with the job.
JOB_FILENAME	This records the name of the job ticket file.
JOB_PATH	This records the job ticket path file, if it is different from the Program/ PlotWorks directory. A maximum of 255 characters is recorded.
IMAGE_FILENAME	This records the name of the image file.
IMAGE_PATH	This records the image path at the time of printing if different from the PlotWorks Program directory. A maximum of 255 characters is recorded.
IMAGE_FILESIZE	This records the number of bytes in the image file.
IMAGE_QUANTITY	This records the number of copies requested.
IMAGE_NUMBER	This records the number of the current copy
FINAL_XSIZE	This is the Paper Sheet X size. This records the size along the X axis of the printed sheet of media.
FINAL_YSIZE	This is the Paper Sheet Y size. This records the size along the Y axis of the printed sheet of media.
ACTUAL_XSIZE	This records the size along the X axis of the main image. This is the original size of the main image without margins, overlays, or any Specified Size and Output Size manipulations.

<b>Data field</b>	<b>Description</b>
ACTUAL_YSIZE	This records the size along the Y axis of the main image. This is the original size of the main image without margins, overlays, or any Specified Size and Output Size manipulations.
UNITS	This records the units of measure used. IN, CM, MM, or ML.
SET_QUANTITY	This records the number of sets requested.
SET_NUMBER	This records the number of the current set.
FORMAT	This records the original Image file format.
MEDIA	This records the Media type outputted.
COMPANY	This records the company name entered in the Company field of the PlotWorks Job Editor or PFS file preferences. A maximum of 64 characters is recorded.
PROJECT	This records the project name entered in the Project field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
CONTACT	This records the contact person entered in the Contact field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
PHONE	This records the contact phone number, entered in the Phone field of the PlotWorks Job Editor or in PFS file preferences. A maximum of 64 characters is recorded.

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<b>Data field</b>	<b>Description</b>
ADDRESS or ADDRESS1	This records the customer address entered in the Address field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
CITY or ADDRESS2	This records the customer city entered in the City field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
STATE or ADDRESS3	This records the customer state or province, entered in the State field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
ZIP, POSTCODE or ADDRESS4	This records the customer zip or postal code, entered in the Zip field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
COMMENT	This records the comments, entered in the comment field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.
ACCOUNT	This records the account number, entered in the Account field of the PlotWorks Job Editor or in the PFS file preferences. A maximum of 64 characters is recorded.



<b>Data field</b>	<b>Description</b>
STATUS	<p>This records the status of the file. The following status values are recorded:</p> <ul style="list-style-type: none"><li>• -: The file was skipped</li><li>• O: The file was printed fine</li><li>• p: The file was processed without warnings</li><li>• a: The image was aborted during output, and did not complete successfully</li><li>• m: The image did not complete printing because the media ran out.</li><li>• W: Warnings were generated</li><li>• e: Error Free Printing.</li></ul>
ERROR_TEXT	<p>This records any text that was generated due to an image file processing error. A maximum of 255 characters is recorded.</p>
SKIPPED	<p>A blank space is recorded when the file is printed successfully. An asterisk (*) is recorded when the file is skipped.</p>
OUTPUT_DEVICE	<p>This records the printer type.</p>
BILLABLE	<p>This records a “Yes” unless the image did not print successfully due to a media jam or if the job is aborted. Depending on the options selected in the Separator Page dialog box, Separator pages might be nonbillable.</p>
UNC_MACHINE_NAME_AND_LOGIN	<p>This records the UNC machine name and user login name. A maximum of 255 characters is recorded.</p>

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Data field	Description
LOG_CONDENSED	This records one line in the log for multiple copies (quantities) of an image within a set. A record for the first page of the first copy of the first set is generated. A record is not repeated for reprints and restarts.
LOG_EXPANDED	This records a line in the log for each copy (quantity) of an image.



*For many data fields, the prefix “PLOT” was changed to the prefix “IMAGE”. If you have older PLP files, the ARU is backward compatible and will recognize the PLOT\_ data fields.*

### Output to File Data Fields

The Output to File DEF file, rptPublisher.def, uses most of the data fields listed in the table above except for OUTPUT\_DEVICE. The Output to File DEF file records the size selected for Output Setup for the FINAL\_XSIZE and FINAL\_YSIZE data fields.

### Scanner ARU Data Fields

Besides the data fields listed before, there are other key words used by the Scanner ARU. These are listed in the table below:

Data field	Description
MODE	This records the appropriate scanner mode.
RESOLUTION	This records the scanning resolution.
RESCAN	This records any re-scans.
MIRROR	This records whether the image was printed mirrored (reversed).
INVERT	This records whether the image was printed inverted
IMAGE DENSITY	This records the image density used.

<b>Data field</b>	<b>Description</b>
THRESHOLD	This records the point that black and white data is divided.
CONTRAST	This records the image contrast.
BACKGROUND REMOVAL	This records if the background removal option is used.
BACKGROUND BIAS	This records the level of background removal used.
EDGE SHARPENING	This records the level of edge sharpening used
DARKNESS	This records the image brightness or darkness.
COMPRESSION_IN_SCANNER	This records the scanner compression level.
AREA_SIZE	This records the size of the area used for adaptive thresholds.
BACKGROUND_SUPPRESSION LEVEL	This records the strength of the background suppression.
AUTO_THRESHOLDING	This records the automatic threshold value used
ADAPTIVE_LEVEL (this applies to Context scanners only)	This records the adaptive threshold value used
BACKGROUND_SUPPRESSION TYPE	This records the type of background suppression used.
BLACK_LEVEL	This records the black level selected
RED_LEVEL	This records the red level selected.
BLUE_LEVEL	This records the blue level selected.
YELLOW_LEVEL	This records the yellow level selected.

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<b>Data field</b>	<b>Description</b>
GREEN_LEVEL	This records the green level selected.
OTHER_LEVEL	This records any other levels selected.
AREA_SIZE	This records the area size used for adaptive thresholding
SCANNER SPEED	This records the scanner speed as a percentage of the scanners full speed.
AUTO_EXPOSURE	This records the auto exposure value used
AUTO_SCAN	This records if the auto-scan feature is used
RED_THRESHOLD	This records the red threshold level selected
BLUE-THRESHOLD	This records the blue threshold level selected
MASKING	This records if masking is used.
EJECT_TYPE	This records how scanned documents exit the scanner
WHITE_POINT	This records the white point of the image. values lighter than the white point appear as white on the image.
BLACK_POINT	This records the black point of the image. values darker than the black point appear as black on the image.
AE_PRE_SCAN	This records AE_Pre_Scan data.
OUTPUT_FORMAT	This records the format selected for final document output, e.g., Bond, Vellum
ORIGINAL_SIZE	This records the size of the hard copy scanned

**Publisher ARU data fields**

Besides the data fields listed before, there are other key words used by the Publisher ARU. These are listed in the table below.

<b>Data field</b>	<b>Description</b>
REQUESTED_PAGES	This records the pages viewed in a file
TOTAL_PAGES	This records the number of pages in the original file.
PIXELSIZE_X	This records the width, in pixels, of the output image.
PIXELSIZE_Y	This records the height in pixels of the output image.
OUTPUT_RESOLUTION	This records the resolution, in DPI, of the output image.
OUTPUT_FORMAT	This records the output file format
USERNAME	This records the login name
ORIGINATOR	This records the product that made the request. (Usually WEB).
METHOD	Records the function called

## Disabling the Printer ARU

Every time a file is printed an entry is appended to the ARU log. Over time your ARU log will become very large. Therefore if your organization does not use the data collected in the log we recommend you disable the ARU log.

### To disable the Printer Interface ARU:

1. Open the **Printer Interface** if it is not already open.
2. Click on the **Setup** menu.
3. Click on the **General Configuration** menu item.
4. Select the check box labeled **Disable ARU logging**.

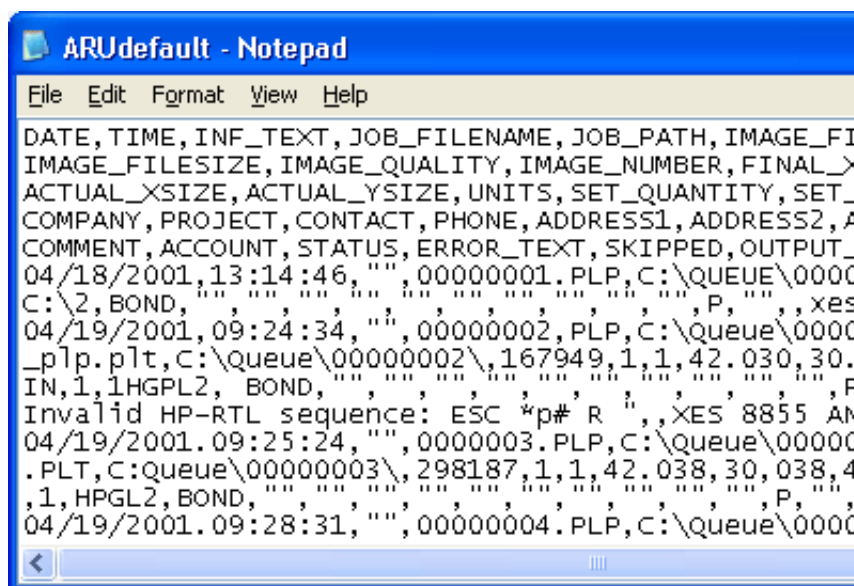
When the Printer ARU is not disabled, two ARU logs are written:

- One in the Queue directory for that image (00000001\00000001.ARU).
- The second as specified for the data fields REPORT\_DESTINATION in the DEF file.

## LOG Files

Log files are comma delimited text files that are generated by the ARU. Data collected in LOG files is determined by the DEF files as explained above. LOG files can be viewed in any text editor like Notepad. These files are designed to be easily imported into most database or spread sheet applications to generate reports.

*Fig 10.2*  
*A sample*  
*LOG file*  
*open in*  
*Notepad*



## Archiving a log file

Periodically you will want to archive or delete a log file. This can be accomplished efficiently by opening Windows Explorer and renaming or relocating the current file. We recommend you select a relevant name, like March2001\_June2001.log.

## ARU file size

When PlotWorks is first installed, a dialog box appears prompting the installer to select a maximum size for the ARU logs. The default maximum file size is 10MB. Every time a job is processed, entries are appended to the ARU log until the maximum allotted size is reached. If the maximum file size is exceeded you are warned. At that point we recommend you archive the old ARU log and start a new log. Once PlotWorks is installed the ARU maximum size value can only be changed in the registry.

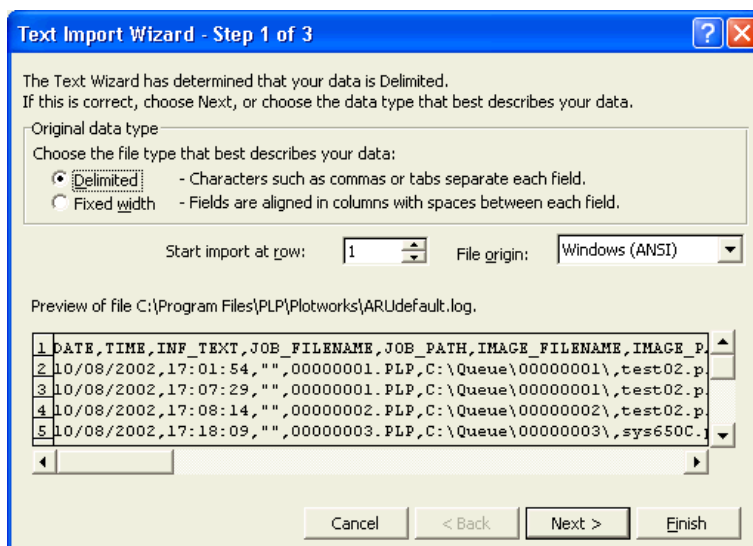
## Using the ARU Log to Generate Reports

The (ARU) is a tool to generate reports. You can use a third party report generating application, such as Crystal Reports, Microsoft Access, or Microsoft Excel, to create reports based on the ARU log.

### Importing the ARU Log File into Microsoft EXCEL

1. Open **Microsoft Excel**
2. Click on the **Open** button. The Open dialog box appears.
3. Select **All Files (\*.\*)** from the **Files of type** drop down list.
4. Using the **Look in** drop down list, navigate to the directory containing the ARU log. This is usually C:\Program Files\PLP\Plotworks
5. Double click on the ARU log file. By default this file is named ARUdefault.log. The Text Import Wizard Step 1 of 3 dialog box opens.

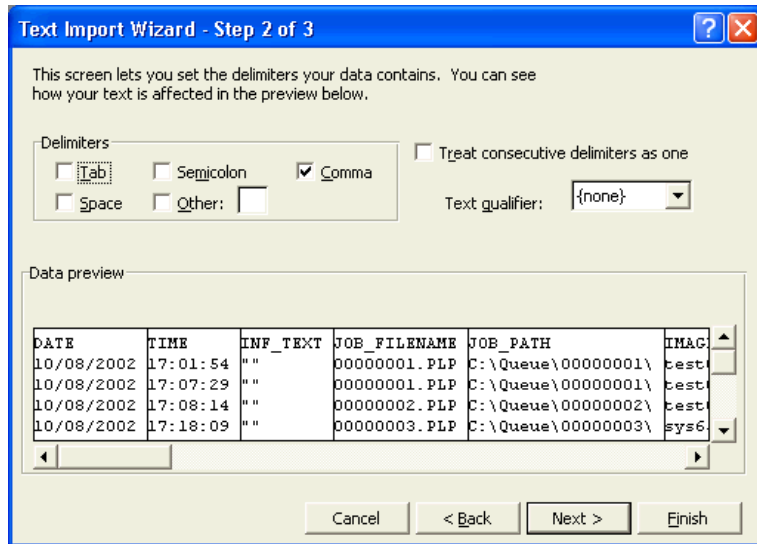
*Fig 10.3*  
*The Text*  
*Import*  
*Wizard*  
*Step 1 of 3*  
*dialog box*



6. Ensure that the **Delimited** radio button is selected.
7. Click on the **Next** button. The Text Import Wizard Step 2 of 3 dialog box opens.



*Fig 10.4  
The Text  
Import  
Wizard  
Step 2 of 3  
dialog box*



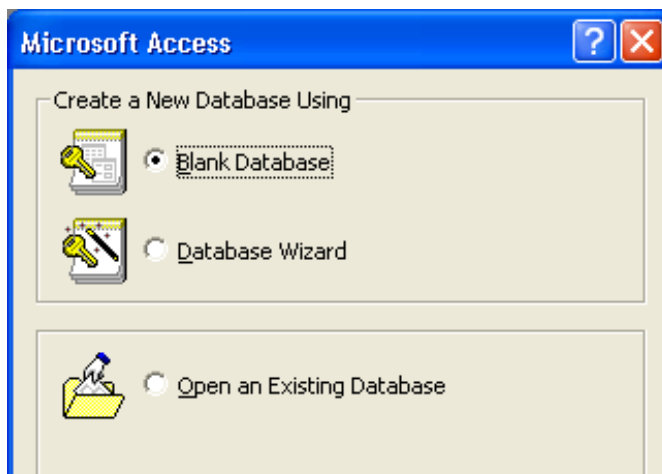
8. Ensure that only the **Comma** check box is selected and that **{none}** is selected in the **Text qualifier** drop down list.
9. Click on the **Next** button. The Text Import Wizard Step 3 of 3 dialog box opens.
10. This dialog box enables you to select properties for each column in the EXCEL spread sheet. Depending on your organizations needs you may need to do this. When you have made your choices if necessary, click **Finish**. The ARU log now populates the spread sheet window.

You can now manipulate the information in EXCEL to generate the reports you desire.

### Importing the ARU log file into Microsoft Access

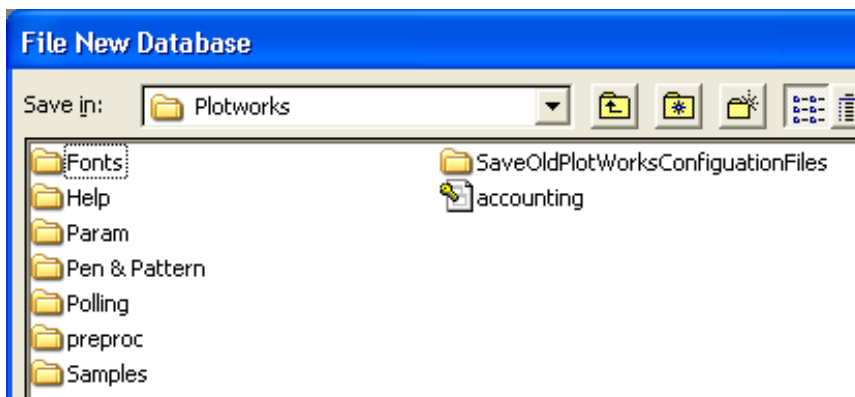
1. Open **Windows Explorer**
2. Navigate to the ARU log file you want to base reports on. This file is usually in the C:\Program Files\PLP\Plotworks directory.
3. Rename the ARU log file with a .txt extension. For example if the file was called ARUdefault.log rename it ARUdefault.txt
4. Open the **Microsoft Access** application. The following dialog box appears:

*Fig 10.5*  
*Microsoft*  
*Access*  
*dialog box*



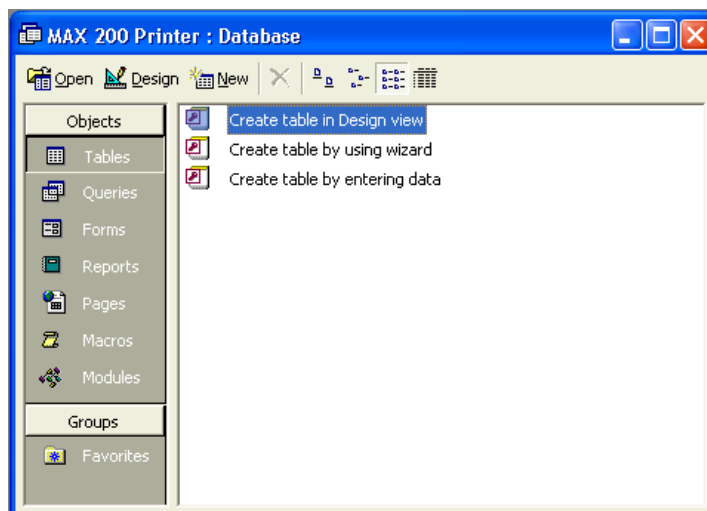
5. Click on the **Blank Database** radio button
6. Click on the **OK** button. The File New Database dialog box appears.

*Fig 10.6*  
*File New*  
*Database*  
*dialog box*



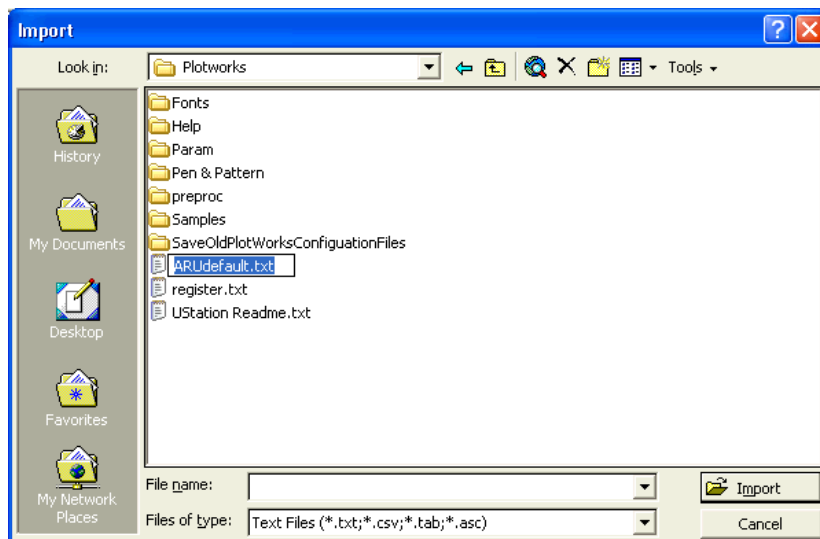
7. Navigate to an appropriate directory and enter a name for the new database.
8. Click on the **Create** button. The following dialog box appears:

*Fig 10.7*  
*Database*  
*dialog box*



9. Click on the **New** button from the tool bar. The New Table dialog box opens.
10. Click on **Import Table** in the select box.
11. Click on the **OK** button. The Import dialog box opens.

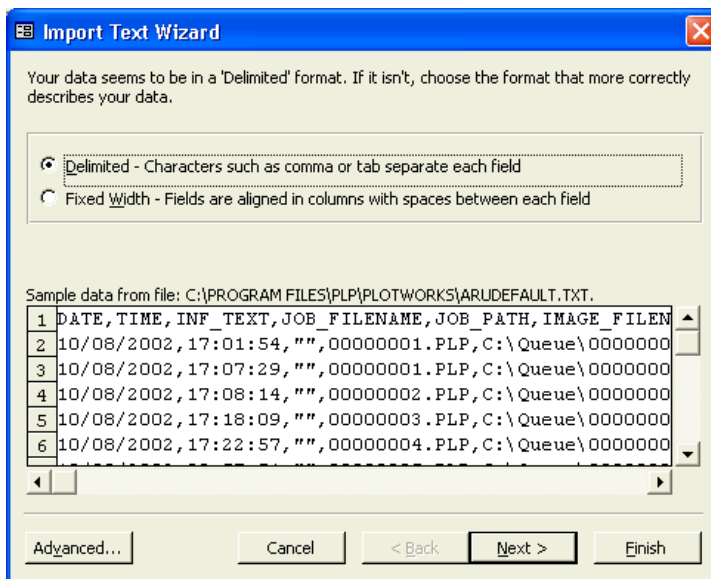
*Fig 10.8*  
*Import*  
*dialog box*



12. In the drop down list labeled **Files of Type:**, select Text Files.
13. Navigate and select the .txt file created in Step 3.

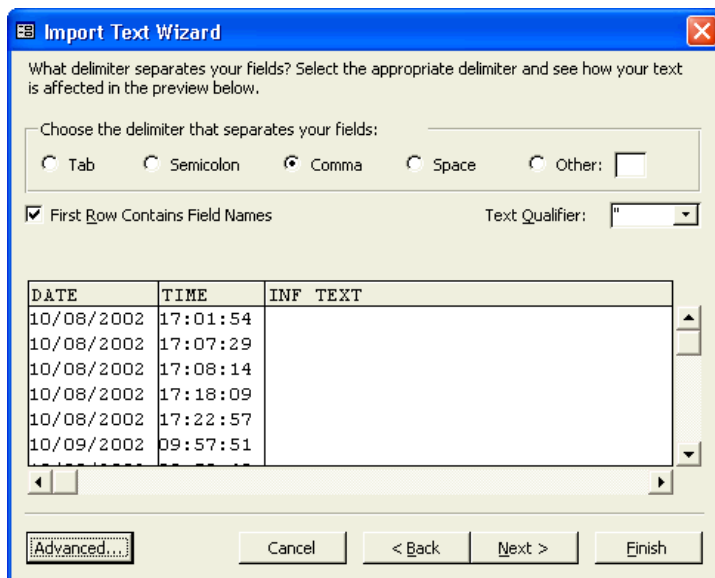
14. Click on the **Import** button. The Import text wizard dialog box opens.

*Fig 10.9*  
*Import*  
*Text*  
*Wizard*  
*dialog box*



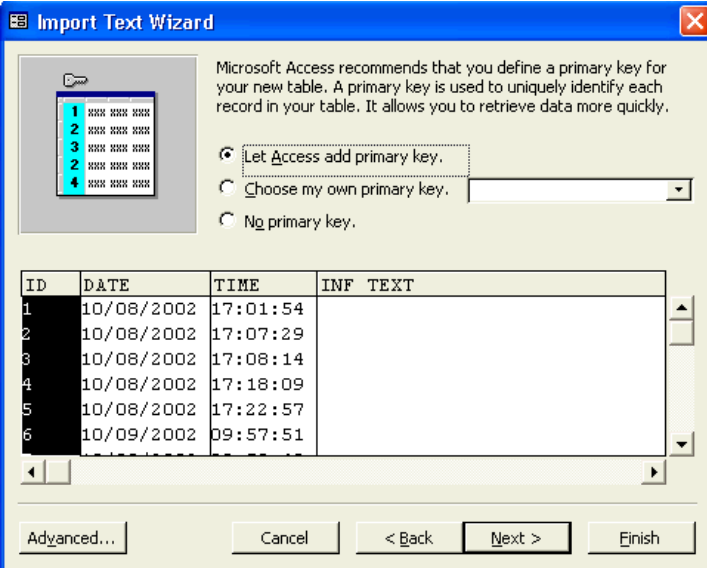
15. Select the radio button titled, **Delimited - Characters such as a comma or tab separate each field**.
16. Click on the **Next** button. The following Import Text Wizard dialog box opens.

*Fig 10.10  
Import  
Text  
Wizard  
dialog box*



17. Ensure the **Comma** radio button is selected.
18. Check the **First Row Contains Field Names** check box.
19. In the **Text Qualifier** drop down list, select the double quotation marks (“”).
20. Click on the **Next** button. The next Import Text Wizard dialog box opens.
21. Select the radio button titled **In a New Table**.
22. Click the **Next** button. The next Import Text Wizard dialog box opens. This dialog box allows you to edit the fields. This is not necessary.
23. Click the **Next** button again. The next Import Text Wizard dialog box opens

*Fig 10.11*  
*Import*  
*Text*  
*Wizard*  
*dialog box*

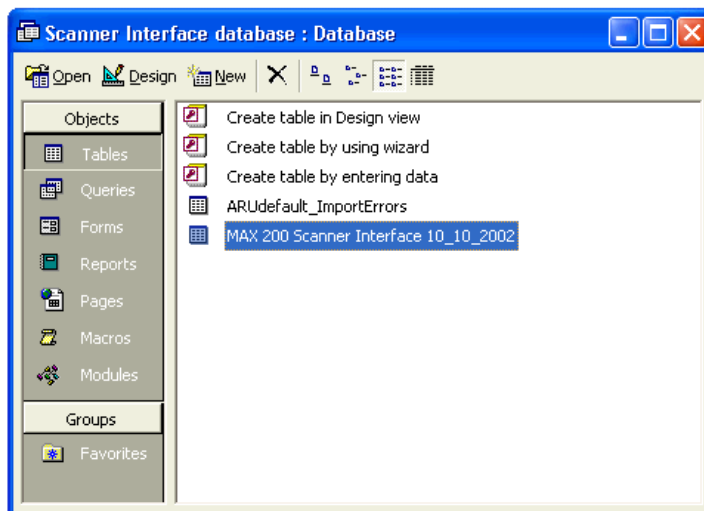


The dialog box is titled "Import Text Wizard". It contains a preview of a table with 4 rows and 4 columns. The first column is highlighted in blue. To the right of the preview, there is a text box with the following text: "Microsoft Access recommends that you define a primary key for your new table. A primary key is used to uniquely identify each record in your table. It allows you to retrieve data more quickly." Below this text are three radio buttons: "Let Access add primary key." (selected), "Choose my own primary key." (with a dropdown menu), and "No primary key." Below the radio buttons is a table with 4 columns: ID, DATE, TIME, and INF TEXT. The table contains 6 rows of data. At the bottom of the dialog box are five buttons: "Advanced...", "Cancel", "< Back", "Next >", and "Finish".

ID	DATE	TIME	INF TEXT
1	10/08/2002	17:01:54	
2	10/08/2002	17:07:29	
3	10/08/2002	17:08:14	
4	10/08/2002	17:18:09	
5	10/08/2002	17:22:57	
6	10/09/2002	09:57:51	

24. Ensure that the **Let Access add Primary Key** radio button is selected and the **ID** field is highlighted.
25. Click the **Next** button again. The last Import Text Wizard dialog box opens
26. In the text box labeled **Import to Table**, enter a name for the table. For example MAX 200 Scanner Interface 12\_2\_2001
27. Click on the **Finish** button. The table is now displayed in the Database dialog box under **Table**.

*Fig 10.12  
Database  
dialog box*



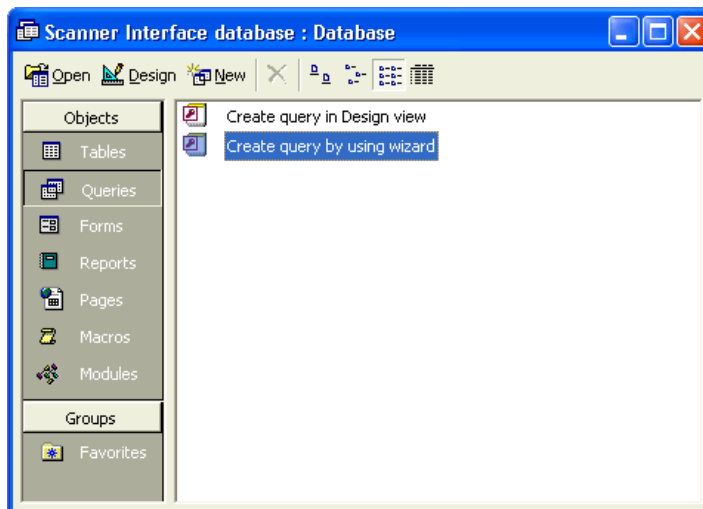
The table you just created contains all the data originally contained in the ARU log. This table can be used to run different Queries and Reports as required.

### **Create a Query**

Queries are Microsoft Access's way of compiling useful data. The type of queries you can run are limitless. In the section we will create a very simple query to view all Bond media jobs in October. While this is not the most useful information to compile the purpose is to expose you to Microsoft Access's functionality.

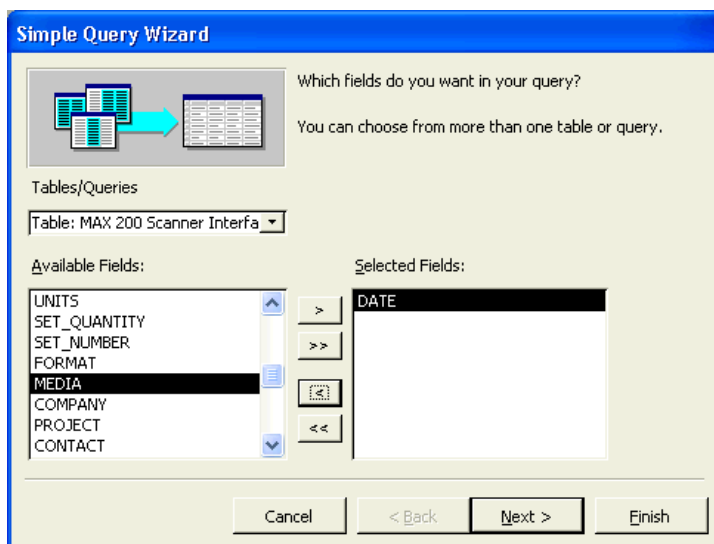
1. In the Database window click on **Queries**.

*Fig 10.13*  
*Queries*  
*tab of the*  
*Database*  
*dialog box*



2. Double click on **Create query by using wizard**. The Simple Query Wizard dialog box opens.

*Fig 10.14*  
*Simple*  
*Query*  
*Wizard*  
*dialog box*

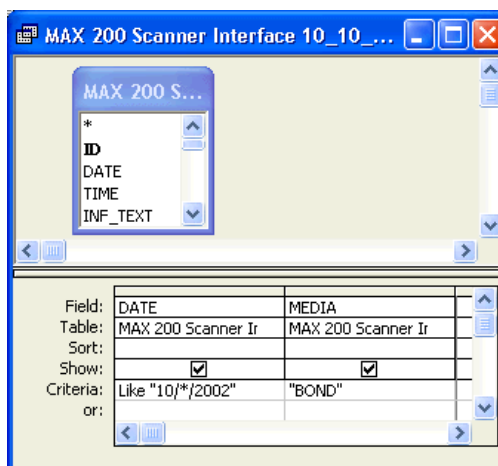


3. Ensure the correct Table is listed in the **Table/Queries** drop down list. In our example this is the MAX 200 Scanner Interface 10\_10\_2000 table
4. In the **Available Fields** select box select **Date**.



5. Then click on the button labeled “>”. Date appears in the **Selected Fields** group box.
6. In the **Available Fields** select box select Media.
7. Then click on the button labeled “>”. Media appears in the **Selected Fields** group box.
8. Click on the **Next** button. A dialog box appears prompting you to name your Query.
9. In the text box labeled, **What title do you want for your Query**, enter a title. For example, “Media used”.
10. Select the radio button labeled **Modify the query design**.
11. Click **Finish**. The Query opens in design view:

*Fig 10.15  
Query in  
Design  
View*



12. In the column labeled Media, in the row labeled Criteria, Enter “**BOND**”
13. In the column labeled Date, in the row labeled Criteria, Enter **Like“10/\*/2002”**.
14. Click on the **Run** icon on the Access tool bar to run the query. All scans in October where Bond is used appear.

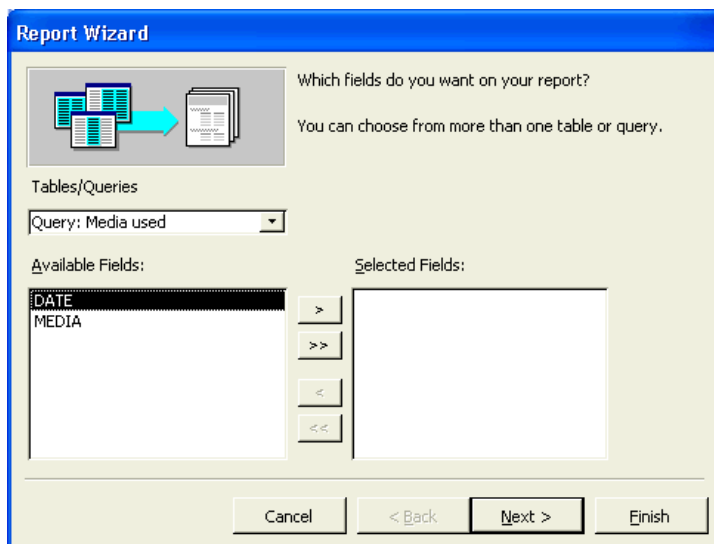


### Creating a report in Microsoft Access

1. Select **Report** in the database window.
2. Double click **Create report using wizard**. The Report Wizard dialog box opens.

3. In the Tables Queries drop down list, Select your Query. for example the Media used query we used in our earlier example. The fields used in the Query are listed in the Available fields drop down list.

*Fig 10.16*  
*Report*  
*Wizard*  
*dialog box*



4. Select the fields contained in the Query from the Available Fields select box.
5. Click on the button labeled “>”
6. All the fields are moved to the Selected Fields select box.
7. Click on the **Finish** button.

To edit the final report you can open the report in design view and add fields and calculations as desired.