User's Guide

Integrated Library System

Circulation Control

Circulation Backup System

VIRTUA ILS – INTEGRATED LIBRARY SYSTEM GUIDES

Circulation Control

Circulation Backup System

Version 16.1

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1. Introduction

This user's guide contains details on the Virtua Circulation Backup System, which is a component of the Virtua™ ILS – Integrated Library System. This guide describes all the features and functions of the Circulation Backup System for the current release of the Virtua ILS software.

Note: From this point on, we will refer to the Virtua ILS – Integrated Library System as simply Virtua or the Virtua system in this user's guide.

In this user's guide, we provide step-by-step instructions for performing the following tasks:

- Setting up the Circulation Backup System.
- Running the Circulation Backup Client.
- Using the Circulation Backup Client to perform transactions.
- Loading and processing transaction data.

This chapter covers the following topics:

⇒ Using This Guide
⇒ Overview of the Circulation Backup System

1.1 Using This Guide

The *Virtua Circulation Backup User's Guide* describes the features of the Circulation Backup System and provides step-by-step instructions for performing tasks related to circulation control.

You can use the list below and the Table of Contents to locate specific topics in this user's guide. For your easy reference, this guide also contains a Table of Figures and an Index. In addition, each chapter begins with a list of hyperlinks to sections included in the chapter.

For . . .	See . . .
A description of the preliminary steps that you must take before you can start using the Circulation Backup System	Chapter 2
Details on starting and configuring the Circulation Backup Client and a description of the menu bar and toolbars	Chapter 3
Details on checking out items, checking in items, renewing items, and accepting payments via the Circulation Backup Client	Chapter 4
Details on managing Circulation Backup transaction files and data	Chapter 5
Details about **circbackup.exe** and available command-line options	Appendix A
Details on manually modifying the **CircBack.ini** file	Appendix B
Information about Circulation Backup functionality that is specific to the Hong Kong Public Library	Appendix C
Information about Virtua Profiler settings of special interest to those using the Circulation Backup System	Appendix D
Details on the changes that were made to this user's guide in this update	Appendix E

1.2 Overview of the Circulation Backup System

The Virtua Circulation Backup System lets you continue to perform circulation transactions when the main system is unavailable.

> **Important:** The Virtua Circulation Backup System is *not* intended for regular use as a standalone circulation system. It is designed as an auxiliary feature of the Virtua software, for temporary use in the event of a server crash, data migration, or software upgrade.

The Circulation Backup System consists of the following components:

- **Circulation Backup Client** - Interface for recording check-outs, check-ins, renewals, and fine payments while the main system is offline. The Circulation Backup Client saves transaction data to a file that can later be loaded into the database.

- **Virtua client** - Interface for launching the Circulation Backup Client, initiating the loading and processing of Circulation Backup transaction files and data, and viewing error logs.

  Note: If the system platform for your institution is IBM AIX, you cannot use the Virtua client to manage transaction files and data. You must use the options offered by **circbackup.exe** at the command line.

- **circbackup.exe** - Executable used at the command line to load and process the transaction files and data saved to the Circulation Backup file (once it has been FTPed to the server). The use of this executable is an alternative to using the Virtua client interface to manage Circulation Backup transaction data.

  Note: The Open Skies URL setting must be configured in the Profiler for you to start **circbackup.exe**. See the *Virtua Profiler/OPAC Parameters User's Guide* for more information.

- **circback.exe** - The executable that resides on your PC that can be used instead of the Virtua client to directly launch the Circulation Backup Client.

- **CircBack.ini** - The initiation file, which resides in the same directory as **circback.exe**. This file specifies the identification number of the workstation and contains all of the locations and associated codes that have been configured for your library system. Although some information in this file must be defined before you can use the Circulation Backup Client, you can specify it on the backup client's Configuration window.

  Note: Virtua automatically updates this file with location information every time you connect to a Virtua database with the Virtua client. This can cause a noticeable delay if your library system contains a very large number of locations, in which case you may wish to disable this automatic update. You can do this via an Operational Security permission in the Virtua Profiler. See "Appendix D - Virtua Profiler Settings" for information on this and other relevant Virtua Profiler settings.

2. Before You Begin Using the Circulation Backup System...

Before using the Virtua Circulation Backup Client, you must make sure that the Circulation Backup system has a list of blocked patrons, so that these patrons will not be able to check out items during your use of the circulation backup system. To do this, the blocked patron data must be downloaded from the server to the PC that will be using the Circulation Backup System..

Note: Before using the Circulation Backup Client, you must also make sure that the **CircBack.ini** file contains location codes for the locations in your library system. This is usually accomplished automatically when you connect the Virtua client to the database. However, if you need to add or change these location values, see the section, "Appendix B - Modifying the CircBack.ini File" for information on doing this manually.

Your library should establish and adhere to a regular schedule for downloading blocked patron data to the Circulation Backup System. Typically, this should occur at least once each week.

The simplest way to ensure that blocked patron data is kept up to date is to use the Virtua Profiler parameter Scheduled Jobs. See the section "Scheduled Jobs" for more information on this function.

To download blocked patron records from the server to the PC,

1. Log in to the server as **dbadmin**.
   a. (*Optional*) If you are not using Scheduled Jobs, type: **`blockpat.exe ptrnblok`**
   b. Press Enter.

      This creates two files on the server:

      - **ptrnblok** - Contains a list of blocked patrons, the amount of money each blocked patron owes, and up to 10 block codes.
      - **ptrnblok.txt** - Contains a list of block code definitions.

2. FTP the **ptrnblok** and **ptrnblok.txt** files to the Work Directory (e.g., **Program Files\VTLS\Virtua**) on your circulation PC.

To download blocked patron records from a single specific library location to the PC, use the following command:

`blockpat.exe -l [location code] ptrnblok`
…where [location code] is the code assigned to the desired location in the Location Names parameter in the Virtua Profiler.

Here is a list of the special block codes in **ptrnblok**:

- **vtls1** - Not Valid (Appears when the patron's "valid" flag is off.)
- **vtls2** - Privileges Not Started (Appears when the patron's privileges have not started yet according to the 042 tag in the patron record.)
- **vtls3** - Privileges Expired (Appears when the patron's privileges have expired according to the 042 tag in the patron record.)
- **vtls4** - Error State (Appears when the patron's record is in Error state)
- **vtls5** - Unknown (Appears when there is a problem determining whether the patron was blocked, which occurs when, for example, there is a missing matrix in the Virtua Profiler)
- **vtls6** - Checkout Block (Appears when a patron is found to violate the Alerts/Blocks matrix for a check-out transaction)

The text of block codes is defined in the Virtua Profiler. For information on defining block codes, see the *Virtua Profiler/Circulation Parameters User's Guide*.

Note: If your library system has a very large number of patrons, a faster method for creating the **ptrnblok** and **ptrnblok.txt** files is to run the script **blockpat.sh**. Note that **blockpat.sh** cannot be used to process patrons for a single location.

To run **blockpat.sh**,

1. Log in to the server as **dbadmin**.
2. Type: **`blockpat.sh [filename]`**

Where **`[filename]`** is the name of the file to which to write the list of blocked patron IDs. Note that the Circulation Backup System currently requires that this filename be **ptrnblok.txt**.

The script calls **blockpat.exe**, and outputs a list of which patrons on the file are blocked. You can then FTP the files to your workstation according to the instructions in this section.

3. Getting Started with the Circulation Backup Client

This chapter describes ways to launch the Circulation Backup Client, configuration options, and aspects of the menu bar and toolbar. This chapter covers the following topics:

⇒ Launching the Circulation Backup Client
⇒ Configuring the Circulation Backup Client
⇒ Aspects of the Circulation Backup Client

3.1 Launching the Circulation Backup Client

To launch the Circulation Backup Client,

1. From the Virtua main menu bar, click Circulation > Circ Backup > Launch Circ Backup Client (*Figure 3-1*).

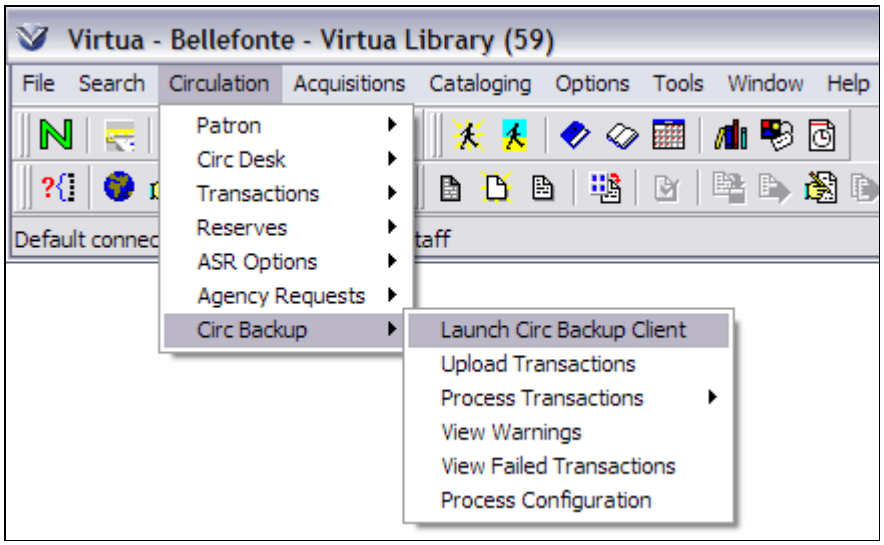


Figure 3-1. Virtua Main Menu, Circulation > Circ Backup Option

-OR-

In your **VTLS\Virtua** directory on your PC, double click **circback.exe**.

The Circulation Backup log-in window appears (*Figure 3-2*).

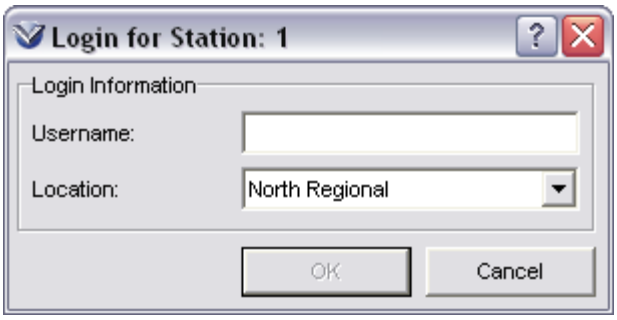


Figure 3-2. Circulation Backup Log-in Window

2. In the Username text box, type the user name for your user profile.
3. In the Location drop-down list, select a location.
4. Click the OK button.

If a transaction file already exists on your PC (i.e., if you have used the Circulation Backup Client to record transactions at your workstation on a previous occasion), the following message appears (*Figure 3-3*):

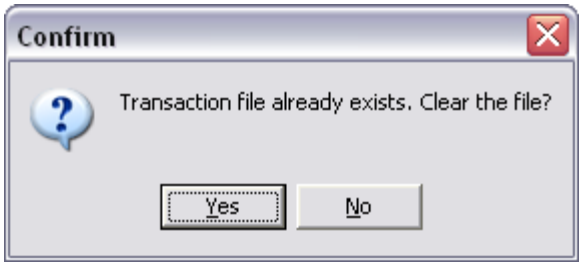


Figure 3-3. Transaction File Already Exists Message

- If you want to clear the transaction file, click the Yes button.

> **Important:** When you click the Yes button, all transaction data collected by the PC will be lost. Click the Yes button *only* if you have already loaded the existing transaction file onto the server.

- If you want all new transactions to be appended to the existing transaction file, click the No button.

The Virtua Circulation Backup window appears (*Figure 3-4*).

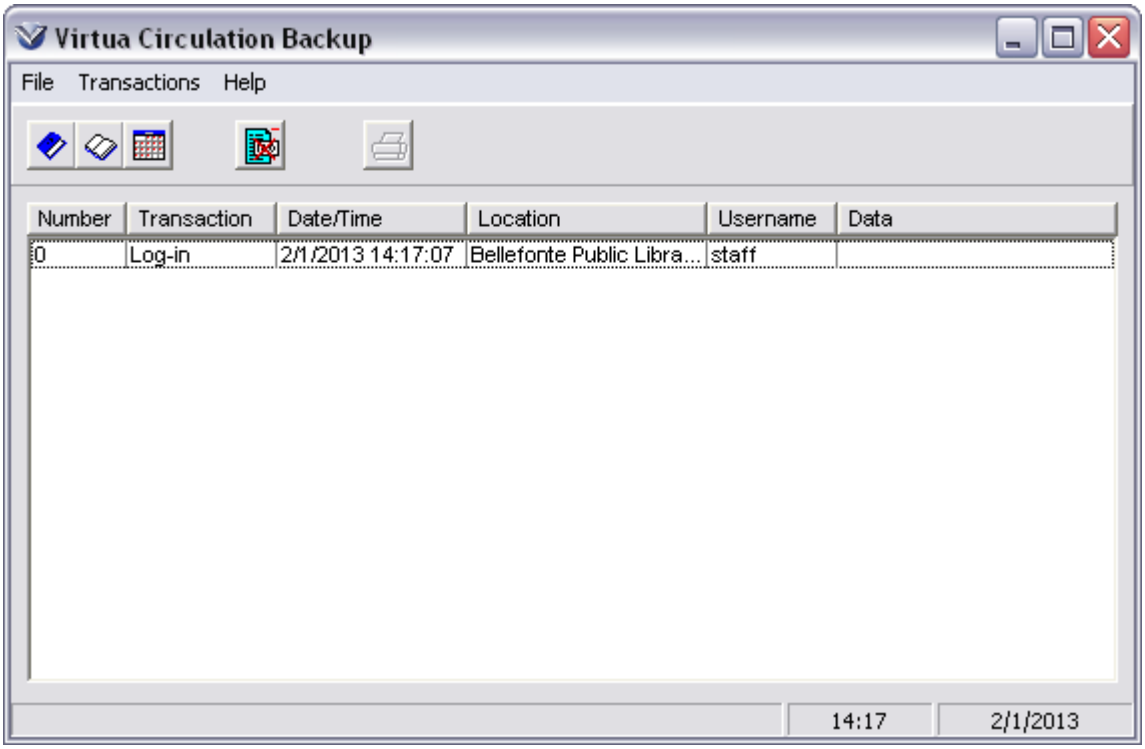


Figure 3-4. Virtua Circulation Backup Window

Now that you are logged in to the Circulation Backup Client, you will need to configure it.

3.2 Configuring the Circulation Backup Client

The Circulation Backup System requires that you configure a few settings in the Circulation Backup Client itself.

Note: The Station ID setting in the Configuration window is also saved to the **CircBack.ini** file. You can also change the value for Station ID by modifying **CircBack.ini** directly, though in most cases this is not necessary. See the section "Appendix B: Modifying the CircBack.ini File" for information about this file.

To configure the Circulation Backup Client,

1. On the menu bar of the Virtua Circulation Backup window (*Figure 3-5*), click File and choose Configuration.

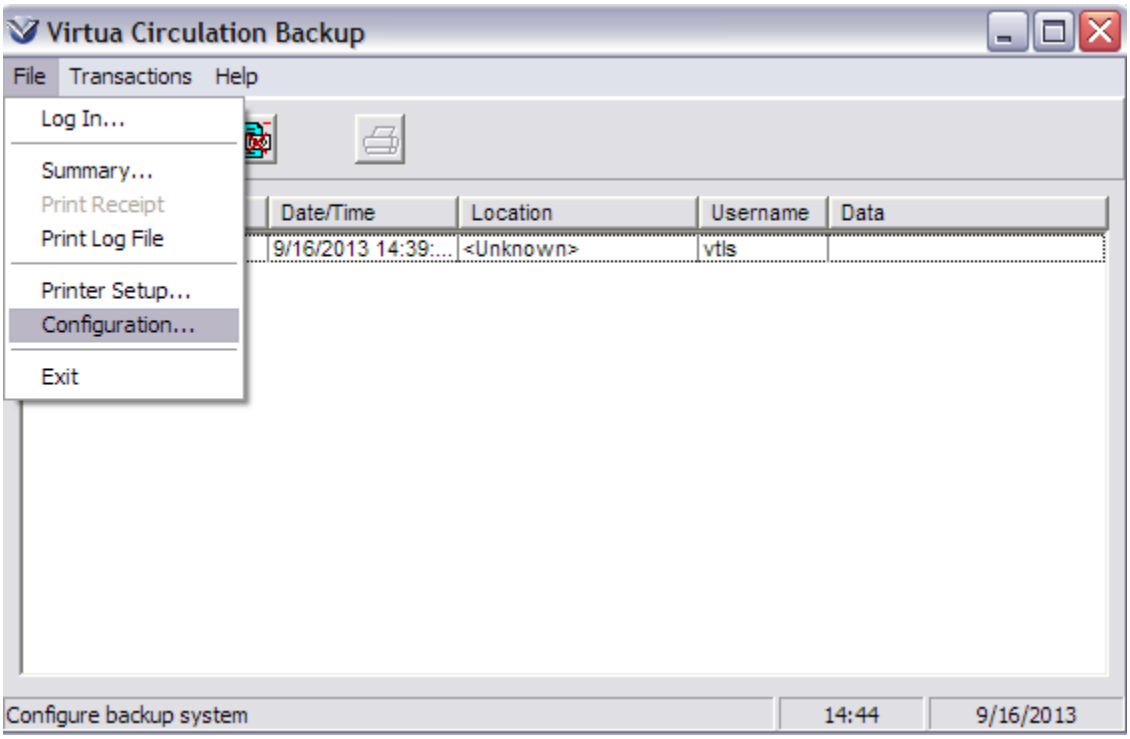


Figure 3-5. Virtua Circulation Backup Window

The Configuration window appears (*Figure 3-6*).

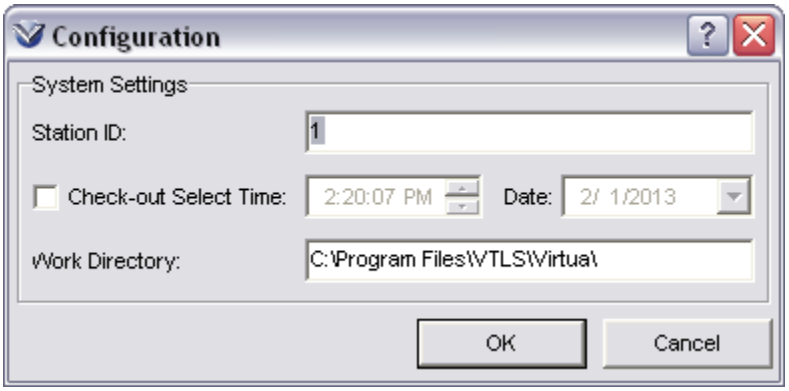


Figure 3-6. Circulation Backup Client Configuration Window

2. Type a station ID in the Station ID text box. The ID can be alphanumeric and of variable length.

> **Important:** Make sure that each workstation has a unique value for Station ID. Assigning two PCs the same Station ID could result in a loss of transaction data.

3. If you want to set a default time to appear in the Selected Time field of the Check Out or Check In window, check the Check-out Select Time check box, and then select a new time and date.

4. In the Work Directory field, type the path to the directory in which you want to store transaction files.

5. Click the OK button.

Your settings are saved. You can change these settings any time by opening the Configuration window and changing the values.

3.3 Aspects of the Virtua Circulation Backup Window

The menu bar and toolbar on the Virtua Circulation Backup window offer various options for using the backup system (*Figure 3-7*).

3.3.1 Virtua Circulation Backup Menu Bar

When you are using the Circulation Backup Client, you use the tools and buttons that are part of the Virtua Circulation Backup window (*Figure 3-7*), instead of the tools and buttons available from the Virtua menu bar. Note that some keyboard shortcuts used within the Virtua client will not work in the Circulation Backup Client.

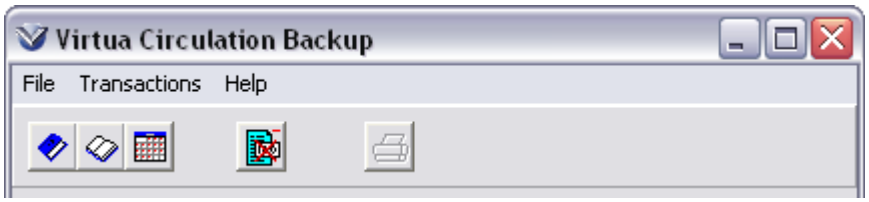


Figure 3-7. Virtua Circulation Backup Window - Menu Bar and Toolbar

3.3.1.1 File Menu

Clicking File on the menu bar (*Figure 3-7*) or clicking ALT+F on your keyboard opens the File menu (*Figure 3-8*).

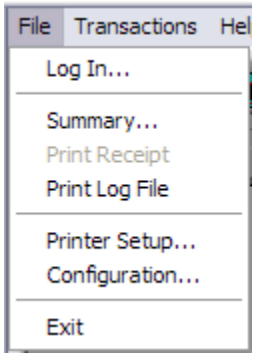


Figure 3-8. File Menu

File menu options:

- **Log In** - Displays the Log-in for Station X dialog box, where you can log in specifying a different location and/or user name.
- **Summary** - Displays the Summary Report for Station X window, which shows a summary of the transactions recorded at a particular PC.
- **Print Receipt** - Prints a receipt for the transaction highlighted in the list box.
- **Print Log File** - Prints the transaction log file for the transactions recorded at a given workstation.

- **Printer Setup** - Displays the Print Setup window, where you can choose various printing options.
- **Configuration** - Displays the Configuration window, where you can configure the Circulation Backup Client.
- **Exit** - Closes the Circulation Backup Client.

3.3.1.2 Transactions Menu

Clicking Transactions on the menu bar or clicking ALT + T on your keyboard opens the Transactions menu (*Figure 3-9*).

Figure 3-9. Transactions Menu

Transactions menu options:

- **Check In** - Displays the Check In window, where you can perform a check-in transaction.
- **Check Out** - Displays the Check Out Patron Access dialog box, where you can enter the patron barcode of the patron for whom you want to perform a check-out.
- **Renew** - Displays the Renew Patron Access dialog box, where you can enter the patron barcode of the patron for whom you want to perform a renewal.
- **Accept Payment** - Displays the Account Payment window, where you can specify the payment amount that you want to credit to a particular patron's account.

3.3.1.3 Help Menu

The Help menu (*Figure 3-10*) provides access to information about the Virtua Circulation Backup client.

Figure 3-10. Help Menu

Help menu option:

- **About** - Displays version and copyright information associated with the Circulation Backup System.

3.3.2 Virtua Circulation Backup Toolbar

Initially, the Circulation Backup toolbar (*Figure 3-11*) offers four active icons. Each icon has a label, or tool tip, which you can view by placing your mouse over the icon.

Figure 3-11. Virtua Circulation Backup Window - Toolbar

Check In - Displays the Check In window, where you can check in an item.

Check Out - Displays the Check-out Patron Access dialog box, which lets you initiate a check-out for a patron.

Renew - Displays the Renew Patron Access dialog box, which lets you initiate a renewal for a patron.

Accept Payment - Displays the Account Payment window, where you can credit a payment to a patron's account.

Once you have performed one or more circulation transactions, selecting the transaction on the Virtua Circulation Backup window activates the Print icon.

Print - Prints a receipt for the transaction.

4. Performing Transactions with the Circulation Backup Client

While your main library system is offline, the Circulation Backup Client can perform check-outs, check-ins, and renewals, and it can accept patron account payments. In this chapter, we provide details on how you can perform these transactions.

This chapter covers the following topics:

⇒ Checking In Items
⇒ Checking Out Items
⇒ Renewing Items
⇒ Accepting Payments

4.1 Checking In Items

To check in an item via the Circulation Backup Client,

1. On the toolbar of the Circulation Backup Client, click Check In .

   The Check In window appears (*Figure 4-1*), displaying the username and location associated with the log-in to the Backup Client.

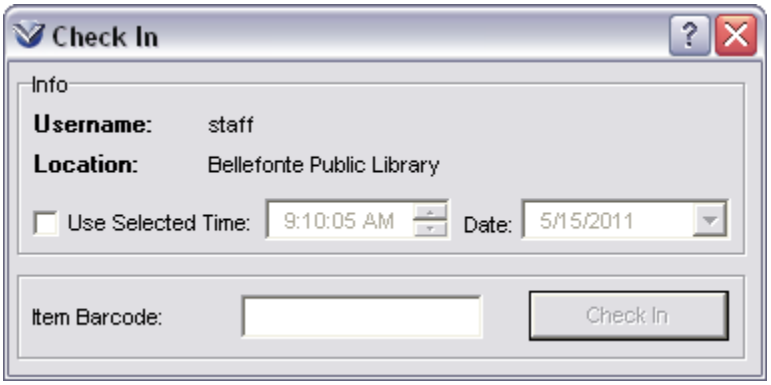


Figure 4-1. Check In Window

2. If desired, select the Use Selected Time check box, and then manually select a check-in time and date for the check in.

3. Type or scan in the item barcode.

4. Click the Check In button.

   The check-in transaction appears in the list box on the Virtua Circulation Backup window (*Figure 4-2*).

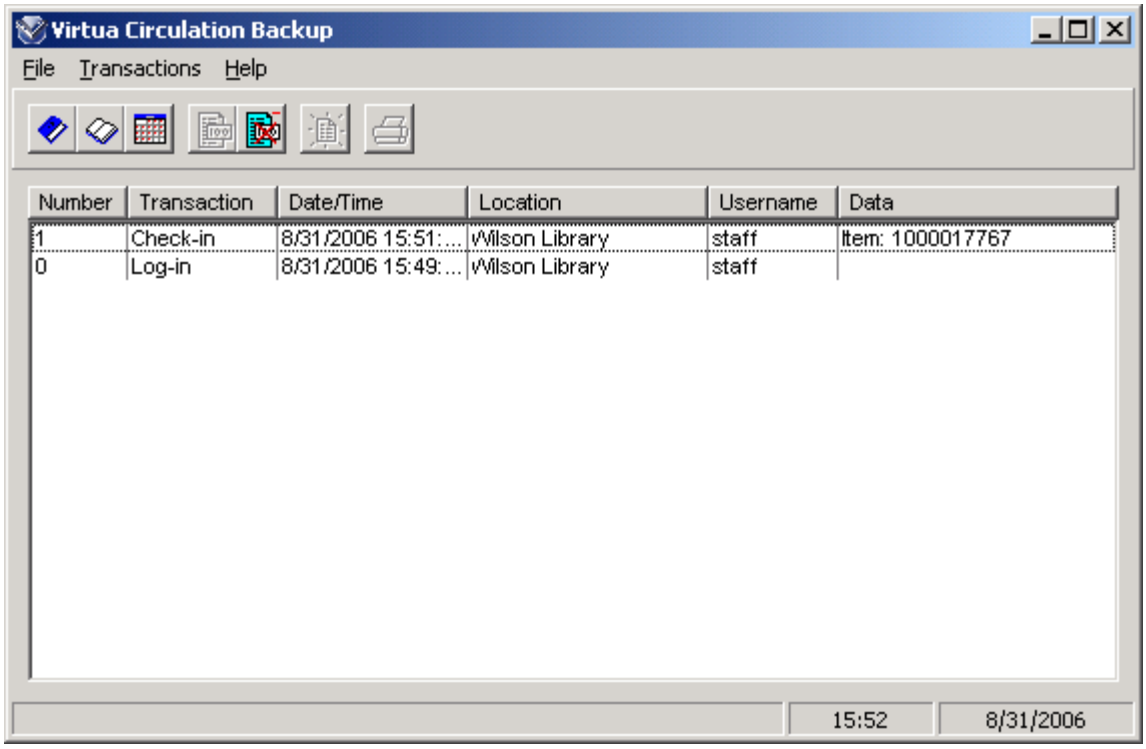


Figure 4-2. Circulation Backup Window Displaying Check-in Transaction

To print a receipt for the check-in transaction,

1. Highlight the check-in transaction(s) in the Circulation Backup window list box.
2. On the toolbar, click Print Receipt , which has become active.

Note: You can select multiple check-in transactions and print a single receipt for the selected transactions. The Print Receipt button is only active if the transactions you select are of the same type.

A receipt prints to the printer specified on the Print Setup window.

4.2 Checking Out Items

To check out an item via the Circulation Backup Client,

1. On the toolbar of the Circulation Backup Client, click Check Out .

   The Patron Access dialog box appears (*Figure 4-3*).

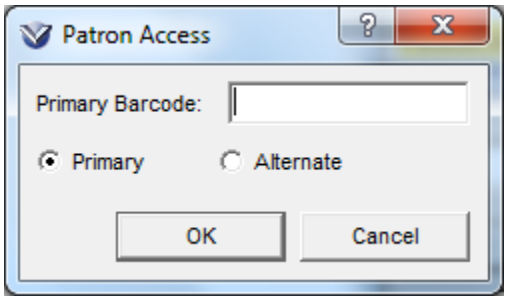


Figure 4-3. Patron Access Dialog Box

2. Type or scan in the patron's primary or alternate barcode, and then click OK.

   The Check Out window appears (*Figure 4-4*).

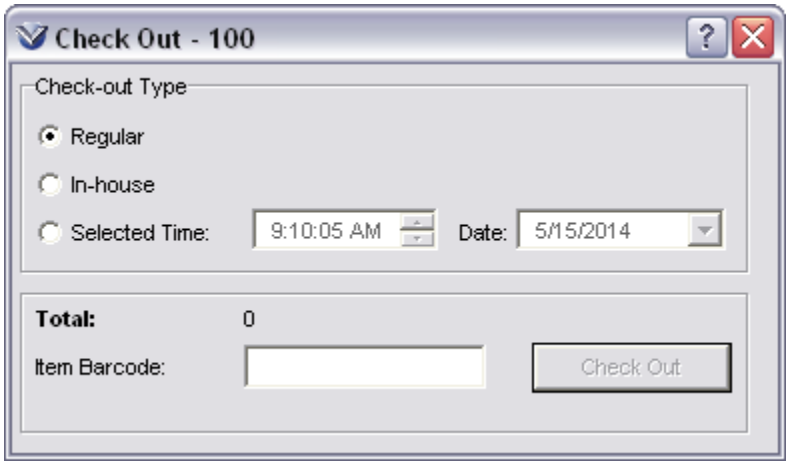


Figure 4-4. Check Out Window

3. Select the Check-out Type you want to use for this transaction: Regular, In-house, or Selected Time and Date.

   Note: The default Selected Time and Date are the time and date you chose on the Configuration window (*Figure 3-6*).

4. Type or scan in the item barcode of the item being checked out.

5. Click the Check Out button.

The check-out transaction appears in the list on the Virtua Circulation Backup window (*Figure 4-5*).

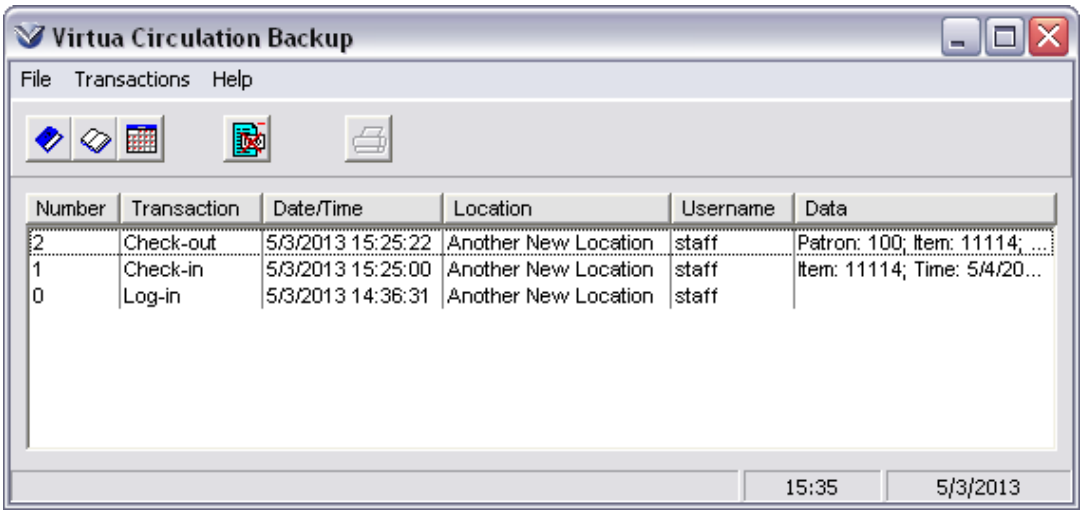


Figure 4-5. Circulation Backup Window Displaying Check-out Transaction

To print a receipt for the check-out transaction,

1. Highlight the check-out transaction(s) in the Circulation Backup window list box.
2. On the toolbar, click Print Receipt , which has become active.

   Note: You can select multiple check-out transactions and print a single receipt for the selected transactions. The Print Receipt button is only active if the transactions you select are of the same type.

   The receipt prints to the printer specified on the Print Setup window.

4.3 Renewing Items

To renew an item via the Circulation Backup Client,

1. On the toolbar of the Circulation Backup Client, click Renew .

   The Renew window appears (*Figure 4-6*).

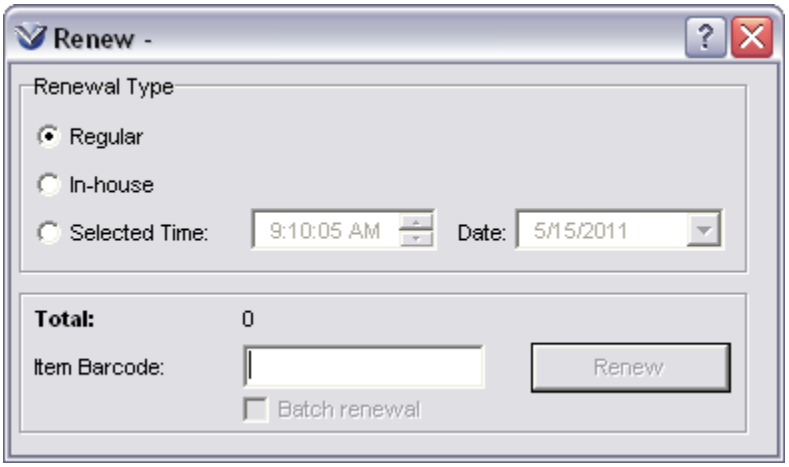


Figure 4-6. Renew Window

2. For the Renewal Type, select Regular.
3. Type or scan in the item barcode.
4. Click the Renew button.

The renewal transaction appears in the list on the Virtua Circulation Backup window (*Figure 4-7*).

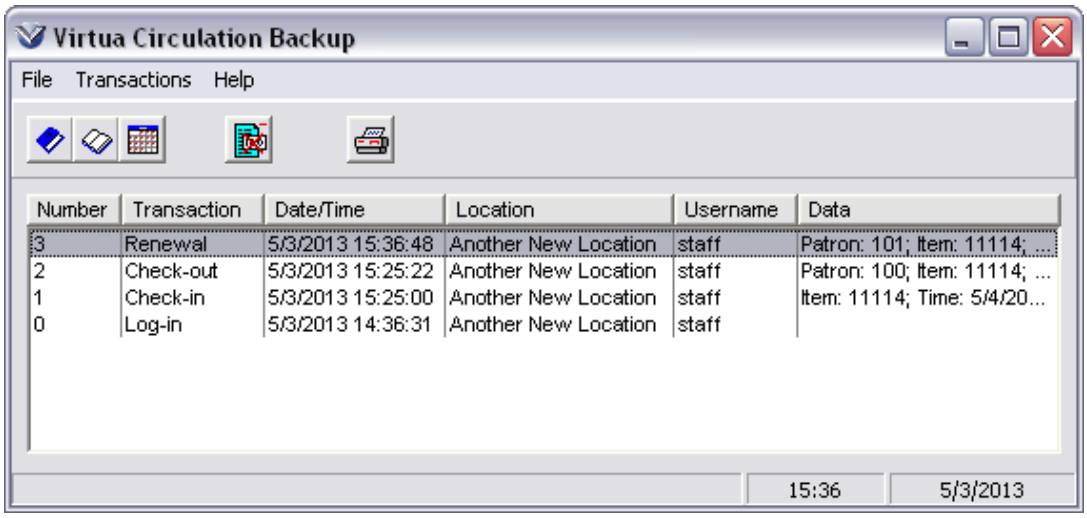


Figure 4-7. Circulation Backup Window Displaying Renewal Transaction

To print a receipt for the renewal,

1. Highlight the renewal transaction(s) in the Circulation Backup window list box.
2. On the toolbar, click Print Receipt , which has become active.

> **Note:** You can select multiple renewal transactions and print a single receipt for the selected transactions. The Print Receipt button is only active if the transactions you select are of the same type.

The receipt prints to the printer specified on the Print Setup window.

4.4 Accepting Payments

To accept a payment for a fine or fee via the Circulation Backup Client,

1. On the toolbar of the Circulation Backup Client, click Accept Payment .

   The Account Payment window appears (*Figure 4-8*).

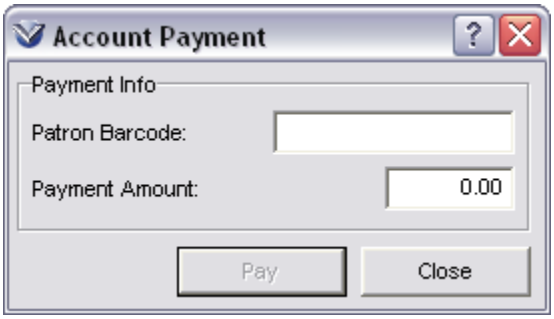


Figure 4-8. Account Payment Window

2. Type or scan in the patron's barcode.
3. Type the amount to credit to the patron's account.
4. Click the Pay button.

Note: All payments are processed by the Virtua server in your home currency.

The payment transaction appears in the list box on the Virtua Circulation Backup window (*Figure 4-9*).

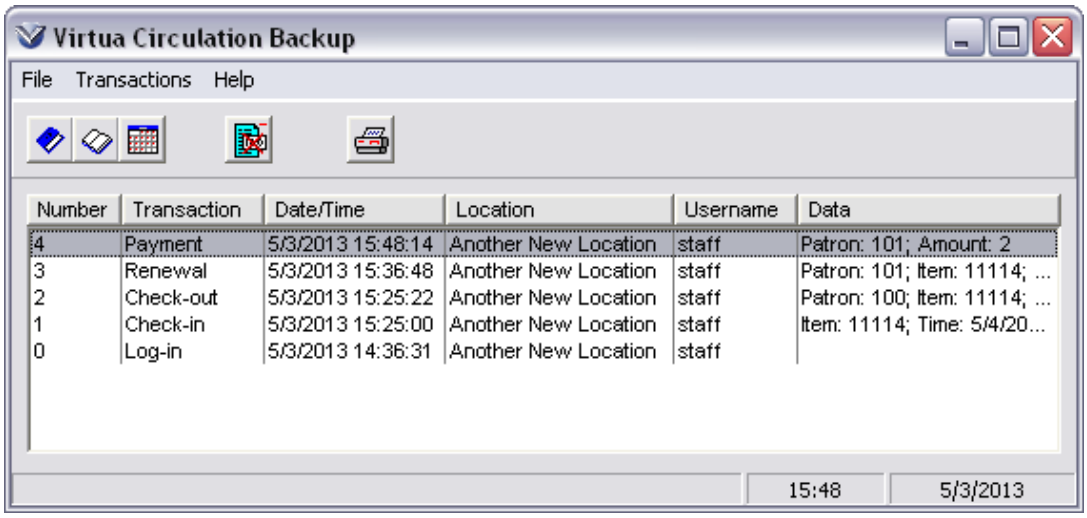


Figure 4-9. Circulation Backup Window Displaying Payment Transaction

To print a receipt for the payment transaction,

1. Select the payment transaction(s) in the Virtua Circulation Backup window list box.
2. On the toolbar, click Print Receipt , which has become active.

Note: You can select multiple payment transactions and print a single receipt for the selected transactions. The Print Receipt button is only active if the transactions you select are of the same type.

A receipt prints to the printer specified on the Print Setup window.

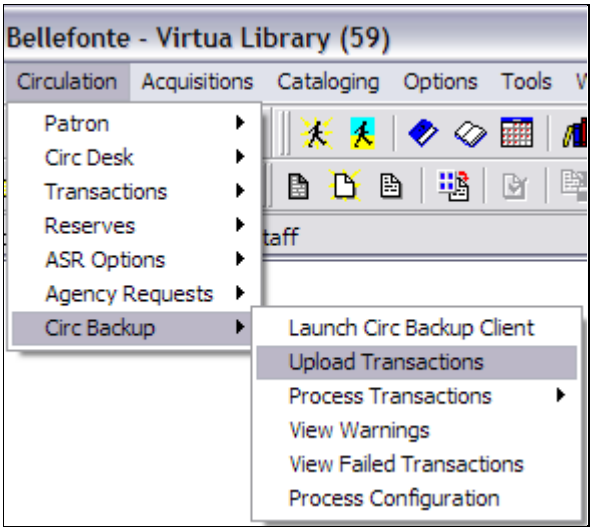
5. Workflow for Managing Transaction Files and Data

After you bring your server back online, you will be ready to take the transaction files you have created using the Circulation Backup Client and load the data into the database. After loading the data into a database table, you will need to process it.

In this chapter we discuss a typical workflow for loading your circulation backup data to the server and processing the data so that it is stored in the database.

You can perform the steps in the workflow in two ways:

- By selecting options from the Circulation > Circ Backup pull-down menu in the Virtua client:



-OR-

- By specifying options at the command-line in conjunction with **circbackup.exe**.

Note: If the system platform for your institution is IBM AIX, you cannot use the Virtua client to manage transaction files and data. You must use the options offered by **circbackup.exe** at the command line.

Important: If you plan to use **circbackup.exe**, you must set the environment variables:

- **EXE_DIR**, which specifies the location of the executables for your version of Virtua,
- **CIRCBACKUP_DIRECTORY**, which specifies the local storage location for circulation backup files, and
- **ORACLE_SID**, which specifies the database that you want to use.

For details on setting environment variables, see the *Virtua System Management Reference Guide*.

1. If you plan to run **circbackup.exe** at the command line to load the transaction data, first FTP the transaction file to the server. If multiple workstations have saved circulation backup data, it is recommended that you FTP all of the individual transaction files to the server and merge them into ONE file. This step is not needed if you plan to use the Virtua client interface to upload the data.

2. Load the transaction file(s) to the database table that temporarily stores the data.

3. Process the transaction file(s) in the database table.

4. Check the logs for problems associated with failed transactions and then reprocess them.

5. Force transactions that had problems.

6. Clear from the database table transaction data associated with invalid patron and item barcodes.

Each of these steps is addressed in more detail below.

5.1 FTPing Transaction Files and Merging Them on the Server

Important: Perform this step in the workflow ONLY if you plan to use **circbackup.exe** to handle the circulation backup data. If you are planning on processing transaction data from the Virtua client, see the section, "Loading Transaction Files."

Each PC used to record circulation transactions via the Circulation Backup Client stores a transaction file named **transX.dat**, where X is the station ID; e.g., **trans1.dat**.

The default location for this file is the **C:\Program Files\VTLS\Virtua** directory at each workstation.

If your library has processed circulation transactions at more than one workstation, or if you have used the Circulation Backup Client for several days and have created a new file each day, you will have multiple **transX.dat** files containing transaction data.

If you have multiple transaction files, we recommend that on the server you merge ALL of the files into a *single* file so that all transaction data can be loaded and processed at the same time. When you merge more than one transaction file, the resulting file will contain all transaction data, sorted by date and time.

To merge and sort multiple transaction files,

1. Log in to the server as **dbadmin**.

2. FTP each **transX.dat** file to the server.

   Note: Transaction files are located on each PC in the directory specified as the Work Directory on the Configuration window (*Figure 3-6*) in the Circulation Backup Client.

3. To merge and sort multiple transaction files, at the prompt, type:

   ```
   sort -t ';' -n -k 2 -o merged.dat *.dat
   ```

   Note: Some FTP programs may change filenames to uppercase. If this occurs, specify the uppercase name in the command line.

   All the individual workstation files are merged into one file called **merged.dat**, which is sorted by date and time.

Hint: If you merge your transaction data into a single file, to use **circbackup.exe** to load and process the data, you will need to substitute the filename **merged.dat** in place of **transX.dat**, which is the argument used for handling a transaction file that has not been merged.

5.2 Loading Transaction Files

Circulation Backup transaction files must be uploaded from each workstation to a database table on the server, where they are temporarily stored until they are processed.

You can upload your transaction file using one of the following methods:

- Initiating a Load from the Virtua Client
- Loading From the Command Line

Note: You can upload circulation backup transactions from multiple workstations at the same time, but you cannot upload data if another instance of **circbackup.exe** running on the server is already processing offline transactions or flushing the offline transactions from the database table. You can start processing transactions while an upload is already in progress, but it is NOT possible to start an upload while transaction processing is already in progress.

5.2.1 Initiating a Load from the Virtua Client

The Upload Transactions option in the Virtua client handles the transfer of the transaction file to the server and the loading of the file data into the database table. Each PC in your library that has handled backup circulation transactions has generated a **transX.dat** file. From each PC, you will need to upload the **transX.dat** file to the server.

To upload the transX.dat file generated by the PC,

- On the Virtua main menu bar, click Circulation > Circ Backup > Upload Transactions (*Figure 5-1*).

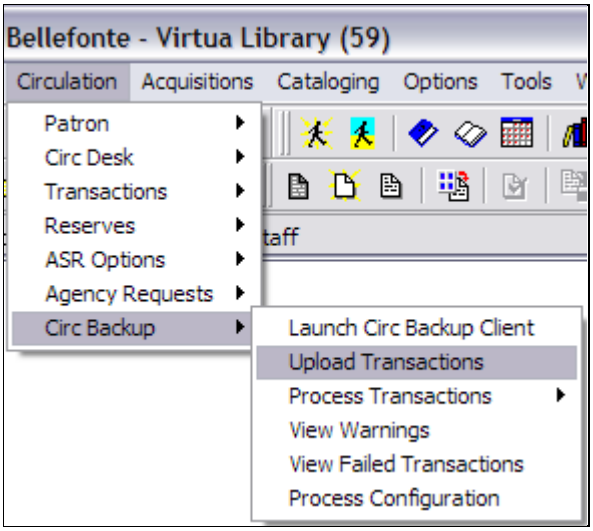


Figure 5-1. Upload Transactions Option

Virtua uploads the transaction file and confirms the success of the upload with a Confirmation message (*Figure 5-2*).

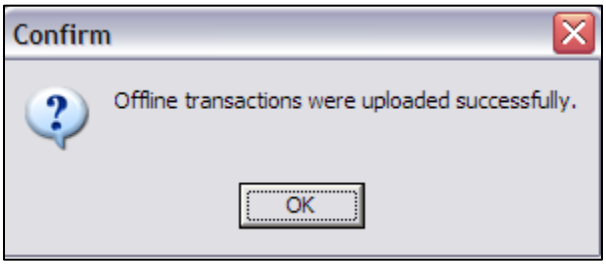


Figure 5-2. Confirmation of Successful Upload

5.2.2 Loading from the Command Line

To load your circulation backup transaction file(s) using circbackup.exe,

1. Log in to your server as **dbadmin**.

2. FTP your transaction file(s) to the server and merge them (see "FTPing Transaction Files and Merging Them on the Server").

3. Load the merged file into the database table with the following command:

```
circbackup.exe merged.dat
```

where **merged.dat** is the filename of the merged transaction files from the various Circulation Backup workstations.

4. Should you have additional **transX.dat** files that were not merged, you can add them to the database table individually. To do this, use the following command:

```
circbackup.exe transX.dat
```

where **transX.dat** is the name of the transaction log file from one Circulation Backup workstation.

The transaction file is loaded into the database table.

Note: As files are loaded to the database table, they are sorted by date/time so that all data will be in chronological order when processed.

5.3 Processing Transaction Data

After transaction files have been successfully loaded to the temporary database table, the data must be processed. You can initiate the processing of the data using the Virtua client interface or from the command line in conjunction with **circbackup.exe**. However, before you process the data, there are a number of options that should be configured.

5.3.1 Process Configuration from the Virtua Client

Before using the Virtua client option for processing transaction data, you will need to configure four Circulation Backup options in the client.

Important: Although the **transX.dat** file must be uploaded from each PC that has generated a file, only ONE of those machines will actually be used to process the file.

5.3.1.1 Configuring Process Options

To configure options for processing transaction data using the Virtua client,

1. Log in to the PC from which you will initiate processing.

2. On the Virtua main menu bar, click Circulation > Circ Backup > Process Configuration (*Figure 5-3*).

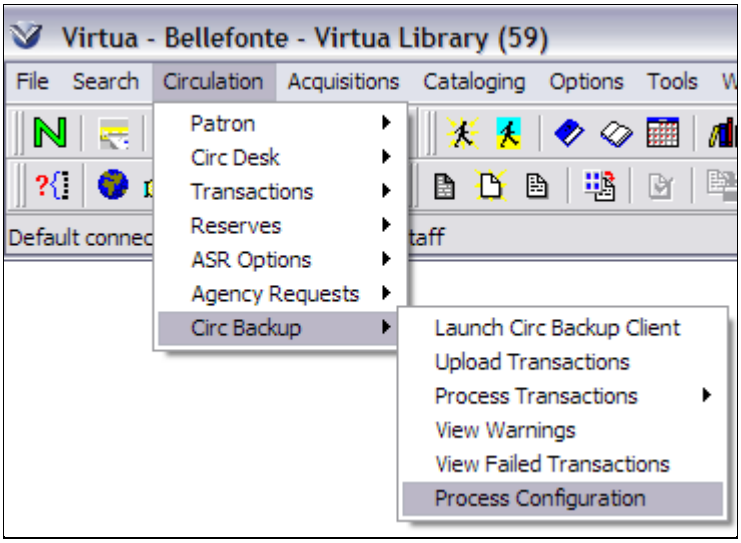


Figure 5-3. Process Configuration Option

The Circ Backup Process Configuration window appears (*Figure 5-4*).

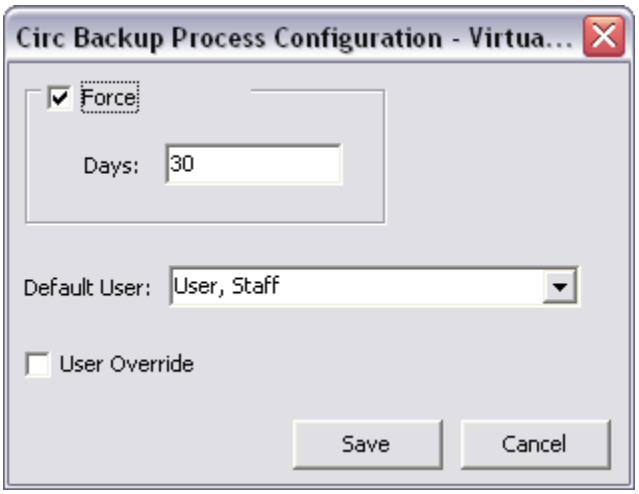


Figure 5-4. Circ Backup Process Configuration Window

3. Configure any or all of the following elements on the Circ Backup Process Configuration window:

- **Force** - Determines whether a check-out or renewal transaction is "forced" even if some parameters are missing.
- **Days** - Specifies the number of days for the loan period of forced check-outs and renewals.
- **Default User** - Lets you specify the Virtua user that will be used when the user associated with a given transaction is invalid.
- **User Override** - Determines that you can override the user in all transactions and instead use the specified default user.

4. Click the Save button.

5.3.2 Processing Transaction Data from the Virtua Client

To process transaction data using the Virtua client,

1. On the Virtua main menu bar, click Circulation > Circ Backup > Process Transactions (*Figure 5-5*).

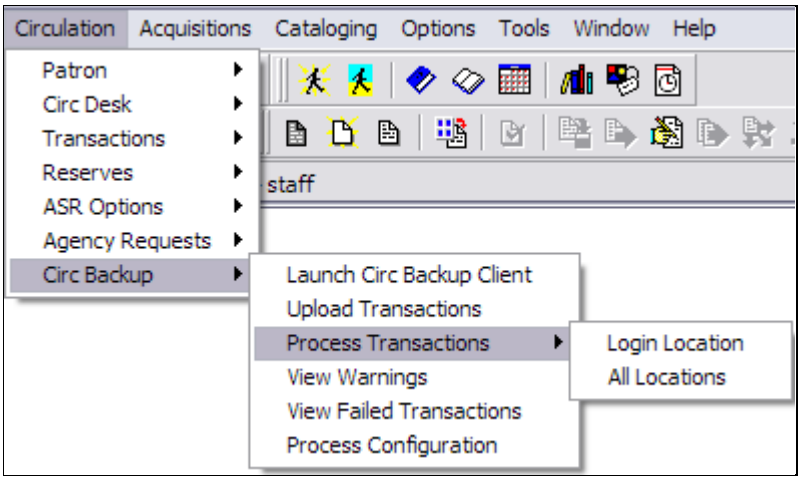


Figure 5-5. Process Transactions Option

2. To process only transactions from the log-in location (i.e., main location and all sublocations) associated with the current PC, select Login Location.

   The following Warning message appears (*Figure 5-6*).

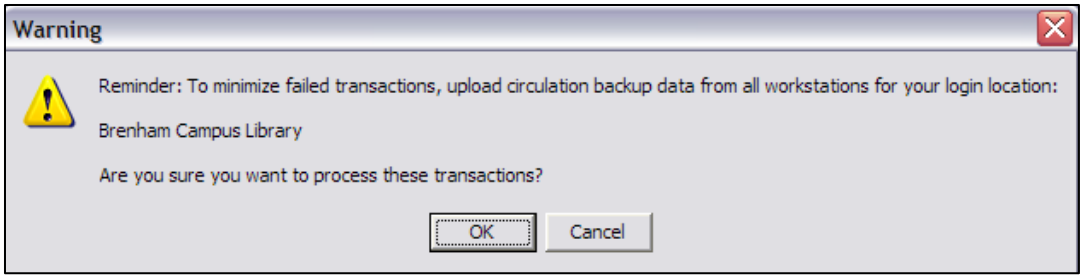


Figure 5-6. Warning: Processing for Log-in Location Only

-OR-

3. To process transactions from ALL locations, select All Locations.

The following Warning message appears (*Figure 5-7*).

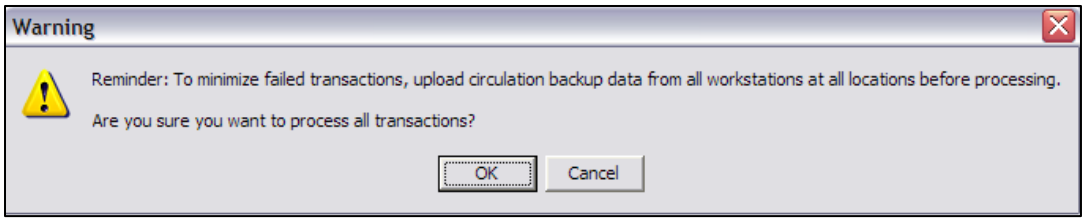


Figure 5-7. Warning: Processing for All Locations

4. If you are sure that all transaction files appropriate to your selected process have been uploaded, click OK.

Virtua processes the Circulation Backup transaction data that has been uploaded to the server/database.

5.3.3 Processing Using Command-line Options

Transaction data that resides in the database table can also be processed using **circbackup.exe**. Depending on the success of this step, you may need to process the transaction table multiple times. You can use multiple options with **circbackup.exe** at the command line (for information, see "Appendix A - circbackup.exe and Options for Processing Transaction Data").

To process your Circulation Backup transaction data using circbackup.exe,

1. Log in to your server as **dbadmin**.

2. At the prompt, type:

   `circbackup.exe -p`

   -OR-

   `circbackup.exe --process`

   Note: Do not specify a filename as part of this command. Once the **transX.dat** or **merged.dat** file has been loaded, the data in the file is temporarily stored in the database table, and **circbackup.exe** looks to the database and processes this data. If your load was interrupted and you need to repeat the load, clear the table first according to the instructions in the section "Clearing the Database Table" and then reload the transaction file.

Virtua processes all records in the database table:

- Transactions that are *successfully* processed are removed from the table.
- Transactions that are unsuccessfully processed will remain in the table until removed.

5.3.4 Loading and Processing from the Command Line in One Step

Instead of loading and processing Circulation Backup transaction data in two separate steps, you can load and process in one step. In this way, you can load the Circulation Backup transaction file AND process the Circulation Backup data immediately after loading.

To load AND process Circulation Backup data in one step,

- At the prompt, type:

  `circbackup.exe -p [filename]`

  -OR-

  `circbackup.exe --process [filename]`

  …where filename is **transX.dat** or **merged.dat**, depending on whether the Circulation Backup transaction file is a "single" file or a merged file.

5.4 Post-processing Activities

After processing the circulation backup transaction data, you will need to inspect the system log files for errors and warnings and take steps to fix any failed transactions.

5.4.1 Checking the Log files

5.4.1.1 Checking from the Virtua Client Interface

Virtua generates three types of log files that contain information about the attempt to process transaction data:

- One contains a list of
- One contains a list of errors, i.e., a list of the transactions that did not load.
- One contains a list of warnings and messages that were generated during processing. The warnings and messages are the same as those that appear during circulation transactions in the Virtua client.

To see a list of all of the transactions that did not load,

On the Virtua main menu bar, click Circulation > Circ Backup > View Failed Transactions (*Figure 5-8*).

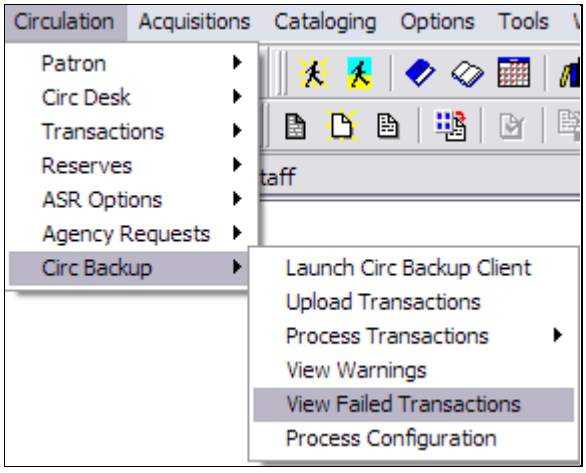


Figure 5-8. View Failed Transactions Option

The Circ Backup Log Files window appears (*Figure 5-9*), listing all of the failed transactions and the following information, as appropriate, about each: location, user ID, timestamp, patron barcode, item barcode, transaction type, and amount paid.

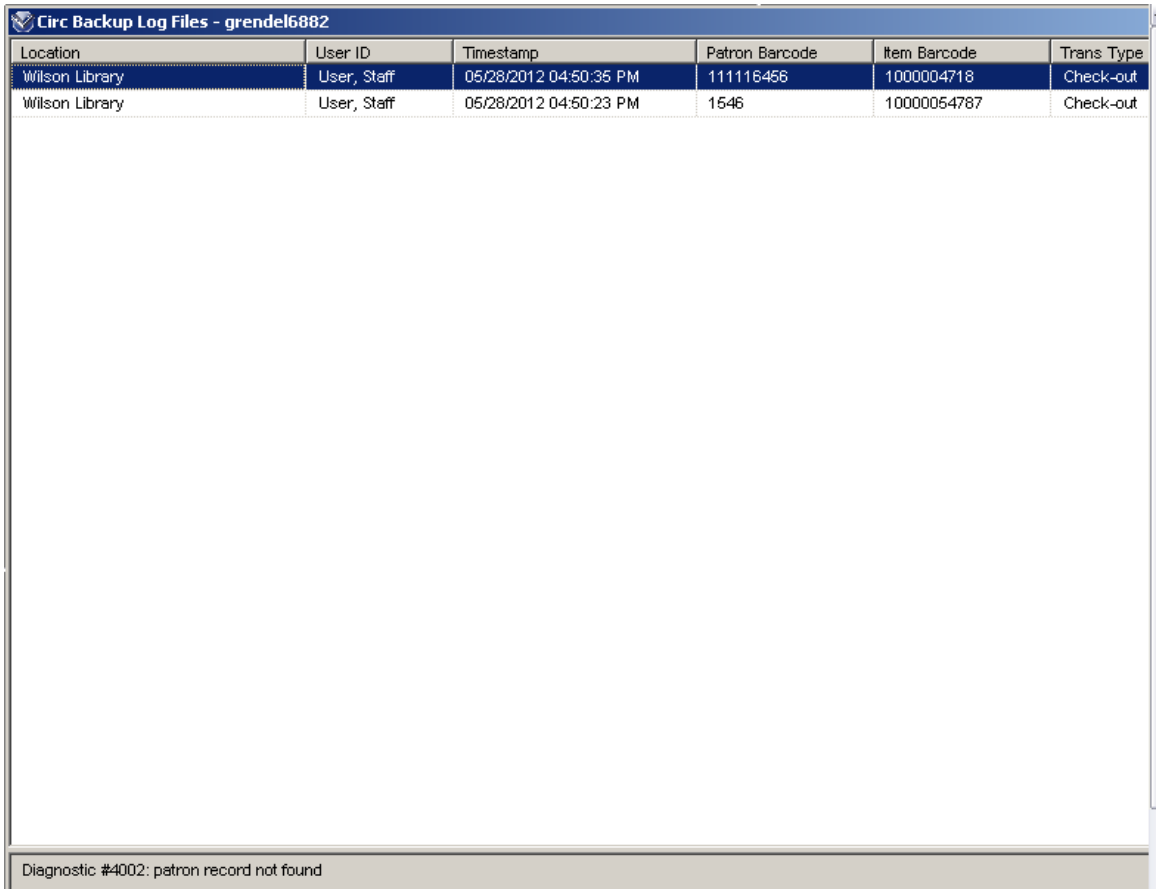


Figure 5-9. Circ Backup Log Files Window

For a highlighted transaction, the bottom of the window displays the diagnostic message, or the reason the transaction failed. At the bottom of the window you can also select one of two radio buttons (*Figure 5-10*) to filter the list on the window.

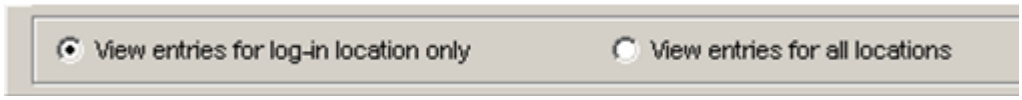


Figure 5-10. Filters on the Circ Backup Log Files Window

To see a list of the warnings generated during processing,

On the Virtua main menu bar, click Circulation > Circ Backup > View Warnings (*Figure 5-11*).

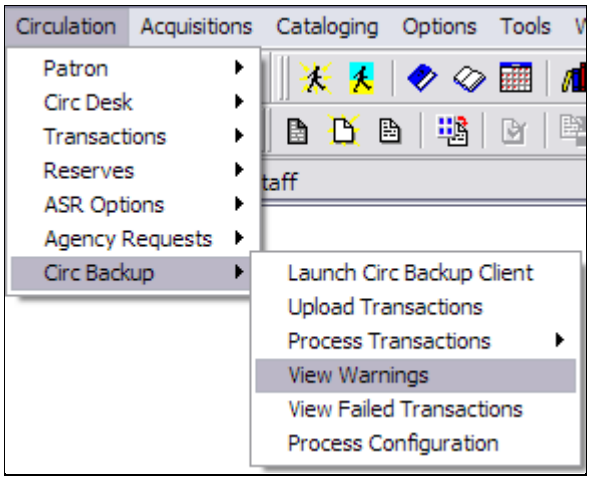


Figure 5-11. View Warnings Option

The window that displays the warnings is similar to the window that displays the failed transactions (*Figure 5-9*).

5.4.1.2 Checking from the Command Line

Virtua generates the following two log files after an attempt to process transaction data:

- **circbackup.failed** - Contains a list of all transactions that did not load.
- **circbackup.report** - Contains warnings and messages that were generated during processing. These are the same types of warnings and messages that appear during circulation transactions in the Virtua client.

Note:
- If a log file was created by processing Circulation Backup transactions for *all* locations (i.e., a "global" process command), the filename has a prefix of "g_".
- If a log file was created by processing Circulation Backup transactions for a *single* location, the filename has a prefix of "<main location code>_" (the code of the main location from which the **process** command was issued).

- These are default file names. You can change these log filenames by specifying a different filename when processing the records using command-line options; see the section "Options to Be Used with circbackup.exe" for details .

To specify a custom log filename, use the following options in conjunction with the **process** option at the command line:

- **-e (--error-file)** - Lets you specify the name of the error file in which to record failed transactions.
- **-w (--warning-file)** - Lets you specify the name of the file in which to record warnings.
- **-l (--log-file)** - Lets you specify the name of the log file in which to write the transaction log.

Example:

```
circbackup.exe –p –e failed.log –w warnings.log
```

When Virtua encounters a problem loading a transaction record, it leaves the transaction in the database table and logs information related to that record and the problem encountered.

To create a list of failed transactions and their problems, type the following command:

```
circbackup.exe –c
```

Below is an example of information about transactions that would not process, including the reason the transaction would not process. You can use this information to fix problems or force the transactions.

```
Checkout transaction from 5/15/2013 at 12:13
at location 10000, operator id 9
        Patron: 123456789
          Item: 0004521633
        Original transaction:
2;20130515121339;10000;9;5678021533;0004521633;1

Diagnostic #4002:
patron record not found
Diagnostic #4024:
transaction canceled
---------------------------------------
Checkout transaction from 5/15/2013 at 12:15
at location 10000, operator id 9
        Patron: 5678021534
```

```
          Item: 0004521634
        Original transaction:
2;20130515121534;10000;9;5678021534;0004521634;1

Diagnostic #4010:
Location + Patron + Item Matrix does not exist: Main
Branch/Student/Fiction
Diagnostic #4024:
transaction canceled
-------------------------------------
Checkout transaction from 5/15/2013 at 12:18
at location 10000, operator id 9
        Patron: 1234578887
          Item: 0012471634
        Original transaction:
2;20130515121834;10000;9;5678021534;0004521634;1

Diagnostic #4044:
Transaction canceled - Patron owes too much money
Diagnostic #4024:
transaction canceled
-------------------------------------
Checkout transaction from 5/15/2013 at 12:21
at location 10000, operator id 9
        Patron: 1234345787
          Item: 0036589634
        Original transaction:
2;20130515122134;10000;9;5678021534;0004521634;1

Diagnostic #4021:
Patron's library privileges have expired
Diagnostic #4024:
transaction canceled
-------------------------------------
```

Figure 5-12. Excerpt from circbackup.exe Error File

Two transaction records shown in Figure 5-12 could be fixed easily. For example,

- You could fix the second transaction (where the `Location + Patron + Item Matrix` is missing) by configuring the Main Branch/Student/Fiction matrix in the Virtua Profiler. See the *Virtua Profiler/ Circulation Parameters User's Guide* for information on modifying the Location + Patron + Item matrix.
- You could also update the record expiration date for the patron record associated with the last transaction.

5.4.1.3 Reprocessing from the Command Line

When you finish correcting errors that appear in the log file, run **circbackup.exe** again to reprocess the transactions. To do this, use the **process** option in conjunction with **circbackup.exe** at the command line.

```
circbackup.exe -p
```

Virtua attempts to successfully process the transactions you corrected.

After reprocessing, check the error file again for any remaining failed transactions. If the corrections that you made according to the instructions above were accurate, the database table should now contain only transactions associated with blocked patrons, incorrect item barcodes, and incorrect patron barcodes. Figure 5-13 shows the transactions that would remain from the example in Figure 5-12.

```
Checkout transaction from 5/15/2013 at 12:13
at location 10000, operator id 9
        Patron: 123456789
          Item: 0004521633
        Original transaction:
2;20130515121339;10000;9;5678021533;0004521633;1

Diagnostic #4002:
patron record not found
Diagnostic #4024:
transaction canceled
---------------------------------------

Checkout transaction from 5/15/2013 at 12:18
at location 10000, operator id 9
        Patron: 1234578887
          Item: 0012471634
        Original transaction:
2;20130515121834;10000;9;5678021534;0004521634;1

Diagnostic #4044:
Transaction canceled - Patron owes too much money
Diagnostic #4024:
transaction canceled
---------------------------------------
```

Figure 5-13. Excerpt from circbackup.exe Error File

Note: If the error file still lists failed transactions that you can fix, correct the problems and repeat the steps above. Otherwise, to process as many of the transaction

records reported in the error file as possible, run **circbackup.exe** using the **force** option, which we discuss below.

5.4.2 Forcing Problem Transactions

Virtua offers a **force** option from the Virtua client interface (see "Configuring Process Options") and for use in conjunction with **circbackup.exe**. The option is used to "force" transactions associated with blocked patrons or where parameters are missing.

Note: You can use the **force** option for the initial processing of transactions or for the reprocessing of failed transactions, depending on your preferred workflow.

To force problem transactions, use the following command:

```
circbackup.exe -p -F -d [n] -u [username]
```

…where

- **-F** is the command to force problem transactions.
- **-d [n]** is the loan period in number of days for checked out items.
- **-u [username]** is the name of a Virtua user you wish to force the transactions to use.

Note: This username is used only for transaction records where the username in the transaction log is invalid or missing.

Example:

```
circbackup.exe -p -F -d 14 -u staff
```

5.4.3 Clearing the Database Table

After forcing transactions, if any failed transaction records remain in the database table, you need to remove them. Typically, these records are left in the table because there is bad data in the transaction log. For example, you may have an invalid patron ID number. Once you finish reprocessing, you need to clear out all data that will not load to the database.

To clear the database table, use the following command:

```
circbackup.exe -f
```

Note: If you do not clear the database table, the next time you process a Circulation Backup transaction file, any records left in this table will also be processed. This can cause incorrect data to load.

6. Appendix A - circbackup.exe and Options for Processing Transaction Data

The **circbackup.exe** executable can be run with a number of options for performing particular tasks. The basic syntax of the command is as follows:

circbackup.exe [options] [filename]

…where **[filename]** is the name of the Circulation Backup transaction file created using the Circulation Backup Client, and **[options]** is one or more of the options discussed below.

Notes:

- When using **circbackup.exe**, you will need to specify a filename only the first time you run the program. All transactions from the named file during the initial load will be stored in the database table, and any subsequent runs of **circbackup.exe** will use the data from that file. Before initiating a *new* load of a *new* transaction file, be sure to clear the database table according to the instructions in the section "Clearing the Database Table."
- The Open Skies URL setting must be configured in the Profiler for you to start **circbackup.exe**. See the *Virtua Profiler/OPAC Parameters User's Guide* for more information.

6.1 Default Behavior of circbackup.exe

The behavior below occurs by default, but can be altered using the command-line options below:

- Creates a log file named **circbackup.log**. You can specify a different name for the log file by using the **-l** option described below.

- Creates an error log called **circbackup.failed**. You can specify a different name for the error log by using the **-e** option described below.

- Creates a warning log called **circbackup.report**. You can specify a different name for the warning log by using the **-w** option described below.

- Processes transactions for all locations. You can choose to process transactions from one location at a time using the **-o** option described below.

- Processes ALL non-blocked transactions. This means that even if a check-in transaction for an item is blocked, if **circbackup.exe** encounters a subsequent check-out transaction for the same item, that check-out transaction will be processed. You can change this behavior by using the **-m** option described below.

- If a transaction is missing parameters, e.g., if a location does not have a loan period defined for a given item class, the transaction will not be processed. You can force through these transactions by using the **-f** option described below.

6.2 Options to Be Used with circbackup.exe

Below is a list of the processing options you can use with **circbackup.exe**. You can use the options individually or in combination. You can specify the command-line options at the time you load the transaction file, or you can upload the transaction file to the server, and then use the options to process the transactions at a later time.

- **-f (--flush)** - Clears the transactions from the database table. Note that transactions are automatically removed from the transaction table after they are successfully processed, so the **-f** option lets you clear any unprocessed transactions from the transaction table.

- **-s (--status)** - Prints out the statuses of the transactions in the transaction table to the screen, as shown in the following example.

```
flush:          0
status:         1
check:          0
process:        0
force:          0
days:           30
error-file:     circbackup.failed
warning-file:   circbackup.report
log:            circbackup.log
user:           staff
user-override:  0
```

```
files to load:

There are 7 transactions remaining out of 14.
          TYPE   NOT PROCESSED          FAILED         SKIPPED
     check-out               0               4               1
   fee payment               0               0               2
```

- **-c (--check)** - Performs initial checks on transactions in the database table but does NOT process the data or update the database. These checks verify that the transaction can be processed. After you perform the initial checks, you can view the Circulation Backup transaction log to see if the transactions passed the checks. You can also use this option alone with **circbackup.exe** after processing to generate a list of the problem transactions.

- **-p (--process)** - Processes the transactions that exist in the database table. This option does not require that you specify an input file. When using the **-p** option, **circbackup.exe** processes the transactions using any other specified options and writes the appropriate information to the error, warning, and transaction logs.

- **-o (--process-for-single-location)** - Processes the transactions that exist in the database table that are associated with the location you specify. This option accepts as its argument the location code of a Virtua location (e.g., **-o 00001**).

  Note: If the location code provided is that of a sublocation, all transactions that exist for the main location that contains that sublocation will also be processed.

- **-F (--force)** - Forces transactions with missing parameters. When you process the transactions using the **-F** option, you will also want to use the **-d** option to specify the loan period for forced check-outs and renewals. You will want to use the **-F** option in combination with the **-p** option, since **-F** is used for transactions that failed the original attempt at processing, and are already in the database.

  Note: Typically, you will use the **--F** option to force transactions associated with blocked patrons. For details, see the section "Forcing Problem Transactions."

- **-d (--days)** - Lets you specify the loan period in days of forced check-outs and renewals. The **-d** option takes an integer argument, which is the loan period in days. For example, to assign a 30-day loan period to forced check-outs and renewals, you would type **`-d 30`**. You will want to use the **-d** option in combination with the **-F** option.

- **-e (--error-file)** - Lets you specify the name of the error file in which to record failed transactions. This option accepts as its argument the name of the error log file (e.g., **-e circbackup.error**). The error file will contain information about failed transactions, which will remain in the database table until they are fixed and reprocessed, forced, or flushed out manually. For details on how to handle failed transactions, see the section "Forcing Problem Transactions." If you do not specify the name of the error file on the command line, failed transactions will be written to the file **circbackup.failed**.

- **-w (--warning-file)** - Lets you specify the name of the warning file in which to record errors. This option accepts as its argument the name of the warning log file (e.g., **-w circbackup.warn**). The warning file will contain information about warnings encountered during processing. These are the same type of warnings and messages that would appear during circulation transactions in the Virtua client. If you do not specify the name of the warning file on the command line, errors will be written to the file **circbackup.report**.

- **-l (--log-file)** - Lets you specify the name of the log file in which to write the transaction log. This option accepts as its argument the name of the transaction log file (e.g., **-l circbackup.log**). The log file will contain information about the tasks performed and transactions processed via **circbackup.exe**. If you do not specify the name of the log file on the command line, the log will be written to the file **circbackup.log**. More information is provided about the log file in the section "Log files" in this document.

- **-u (--user)** - Lets you specify the Virtua user that will be used when the user associated with a given transaction is invalid. This option accepts as its argument the username of a Virtua user (e.g., **-u staff**).

  Note: If you do not have the **staff** user defined in the Virtua Profiler, you must use the **-u** option to specify a user that you do have defined. When you start **circbackup.exe**, it checks for the **staff** user. If the **staff** user does not exist and you have not specified as user with the **-u** option, **circbackup.exe** will generate an error.

- **-U (--user-override)** - Lets you override the user in all transactions and instead use the specified default user. This option is a flag and does not use any arguments.

- **-n (--location)** - Lets you specify the Virtua location that will be used when the location associated with a given transaction is invalid. This option accepts as its argument the location code of a Virtua location (e.g., **-n 00001**).

  Note: If no location code is specified in the **-n** option, **circbackup.exe** will use the log-in location of the user associated with the transaction.

- **-L (--location-override)** - Lets you override the location in all transactions and instead use the default location specified in the **-n** option. This option is a flag and does not use any arguments.

- **-x (--num-threads)** - Lets you define the number of child threads to use to process transactions. This option is used with an argument and can be used ONLY when the **-p** option is also used.

- **-X (--transactions-per-thread)** - Lets you define the number of transactions to be processed by each child thread. The default value is 500.
  Example: `circbackup.exe -p -x4 -X600`

  Note: The use of the **-x** and **-X** options allows **circbackup.exe** to branch off multiple threads to speed up execution time. Note that transactions involving a single patron are processed by the same thread.

- **-m (--check-for-previous-fail)** - Skips processing a transaction if a previous transaction involving that item or patron had failed. For instance, if Virtua encounters a checkout transaction for an item whose previous check-in transaction had failed, that checkout is not processed, and is logged as having been skipped. While running **circbackup.exe** with this option prevents transactions from being processed out of order, it also slows down the processing. This option takes no arguments.

7. Appendix B - Modifying the CircBack.ini File

The **CircBack.ini** file contains parameters important to functionality of the Circulation Backup System.

Note: In most cases, the settings in **CircBack.ini** are updated automatically, or modified by accessing the Configuration window instead of modifying the file directly. See "Configuring the Circulation Backup Client" for more information.

Your **CircBack.ini** file must contain the following settings:

- **Station Number** - A unique, two-digit number identifying the PC you are using to process transactions.

  Note: Do NOT assign two PCs the same station number. Doing so could result in a loss of transaction data.

- **Location Codes** - The name of the location and the associated code that are defined in the Virtua Profiler.

Note:

- In the default **CircBack.ini** file there may also be settings for Fine Codes, Patron Types, and Currency Codes. The functions associated with these settings are not yet available in the Circulation Backup System and should be disregarded.
- By default, Virtua updates the location codes in your **CircBack.ini** file each time you connect to a Virtua server. If you have a large number of location codes in this file, this may cause a significant time lag when you log in. To avoid this lag, you may wish to disable an operational security permission that controls this function. See "Appendix D - Virtua Profiler Settings" for information on this Profiler setting.

If you wish to modify the values in this file directly, the following steps can be used to modify the values in any section. Note that in most cases the location codes are the only values you would need to modify.

To set up Location Codes,

1. Open the **CircBack.ini** file by double-clicking the file name.

   The file opens in a text editor (*Figure 7-1*).

```
[MAIN]
station=1
[LOCATIONS]
10000=Main Library
20000=South Branch12
30000=North Branch
70000=Special Collections
```

Figure 7-1. Example of a CircBack.ini File

2. Under [LOCATIONS], type the location code followed by an equal sign (=) and the name of your location. For example, if the Sir Vernon O'Prating Memorial Library has a location code of 80000, you would type the following line under [LOCATIONS]:

   `80000=Sir Vernon O'Prating Memorial Library`

   Location codes are set in Location Names parameter in the Virtua Profiler. For information on location codes, see the *Virtua Profiler/Introduction and Global Settings User's Guide*.

   Note: Use the location code of your library's *main* location. Do NOT log-in as a sub location.

3. Repeat this process for each location you want to change.

4. Save the file. Make sure that the file is saved as **CircBack.ini**, in the same directory as the **circback.exe** file.

8. Appendix C - Circulation Backup Functionality Specific to the Hong Kong Public Library

8.1 Validating Patrons Using the White List File

The white list file is a list of the HKIDs of valid Virtua patrons who have 'opted-in' to use the HKID MASC card as a library card. The Circulation Backup System uses the white list file to validate patron HKIDs when the MASC authentication server is down:

- When the MASC authentication server is down and the patron is using his or her HKID for circulation, the Circulation Backup System will check the white list to validate the HKID before allowing a circulation backup transaction to proceed.
- If the MASC authentication server is available, the Circulation Backup client will communicate with it to verify that the HKID is valid before allowing a circulation backup transaction to proceed.

You can schedule the generation of the white list file via the Schedule Jobs parameter in the Virtua Profiler. For more information on this parameter, see the *Virtua Profiler/Circulation Parameters User's Guide*.

9. Appendix D - Virtua Profiler Settings

There are many Virtua Profiler settings that affect circulation backup. This section addresses Profiler settings that pertain exclusively or almost exclusively to circulation backup. For further information about these or other Virtua Profiler settings, please see the respective Virtua Profiler User's Guide.

⇒ Scheduled Jobs
⇒ Automatic Update of CircBack.ini

9.1 Scheduled Jobs

The Scheduled Jobs parameter in the Virtua Profiler (*Figure 9-1*) lets you schedule the generation of lists of blocked patrons to the **ptrnblok** and **ptrnblok.txt** files. This ensures that blocked patrons are not permitted to check out items while your library is using the Circulation Backup parameter.

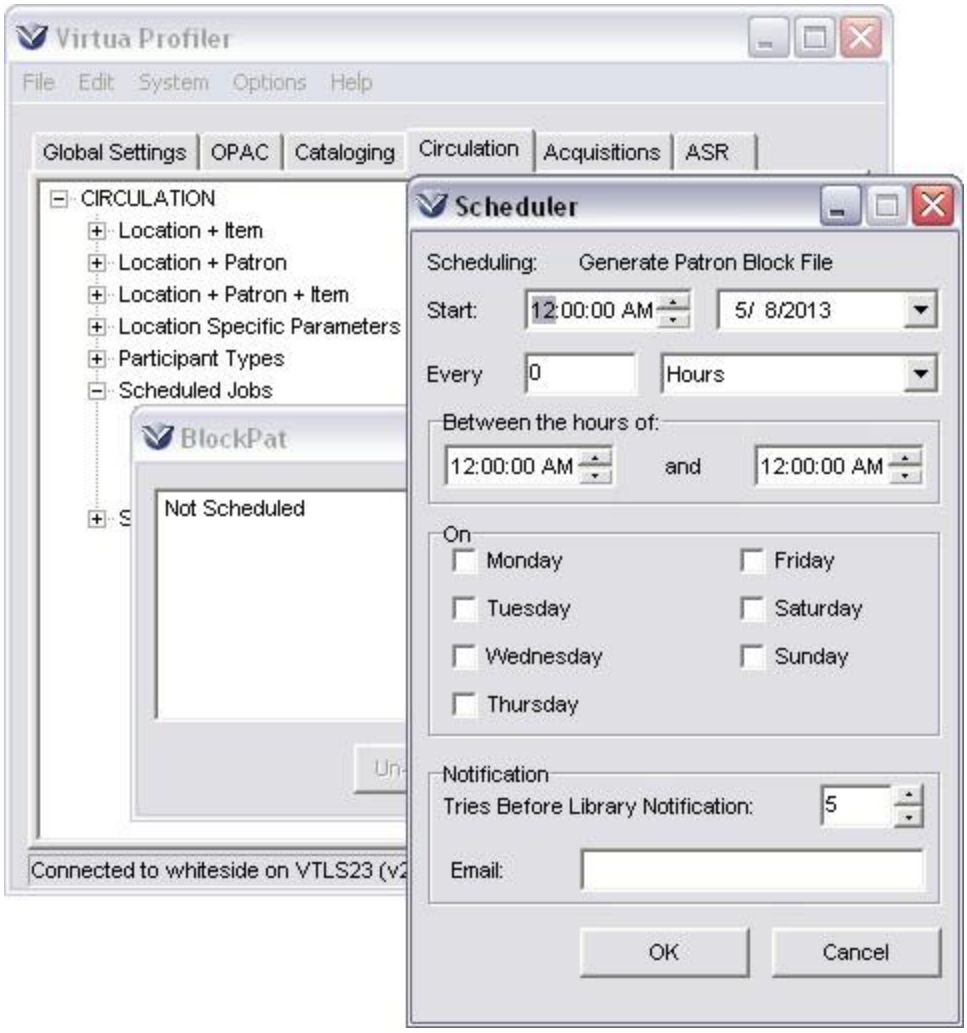


Figure 9-1. Job Scheduler in the Virtua Profiler

Please see the *Virtua Profiler/ Circulation Parameters User's Guide* for detailed information on configuring this parameter.

Note: Even though the Job Scheduler automates the process of creating a list of blocked patrons on the server, you must still transfer **ptrnblok** and **ptrnblok.txt** to the workstation using the process described in the section "Before You Begin Using the Circulation Backup System…"

9.2 Automatic Update of CircBack.ini

By default, each time the Virtua client is connected to the database, the **CircBack.ini** file is automatically updated with a new version of the location codes configured in the Virtua Profiler. For libraries with a very large number of locations, this may cause a noticeable lag each time the Virtua client is connected to the database.

You can disable this automatic update of **CircBack.ini** for a given Virtua staff user or group of users by enabling the "Skip Circback.ini update" Operational Security permission on the Permissions window in the Virtua Profiler (*Figure 3-6*).

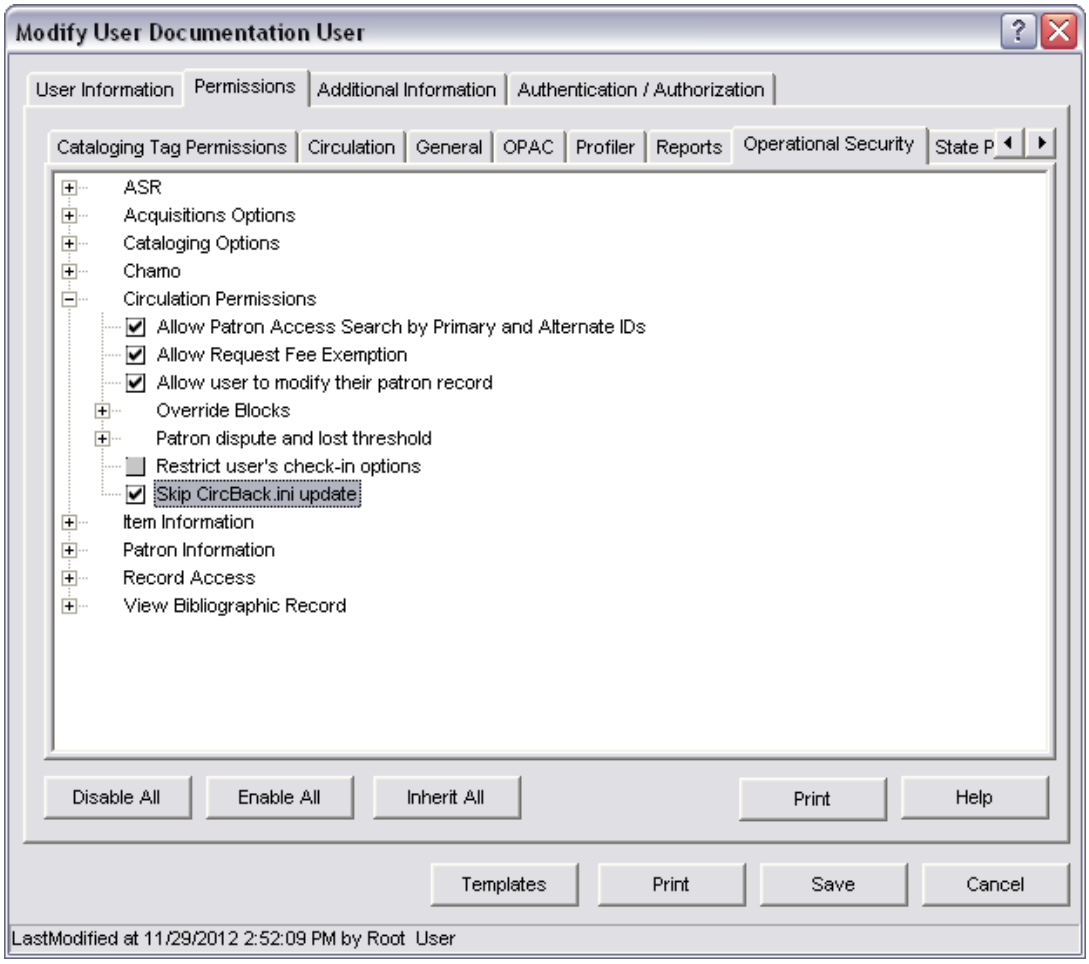


Figure 9-2. Skip CircBack.ini update Operational Security Permission - Virtua Profiler

For information about working with Operational Security permissions, see the *Virtua Profiler/Global Parameters User's Guide*.

Important: If you enable the "Skip CircBack.ini update" setting, you may need to manually update your **CircBack.ini** file prior to using the Circulation Backup System for your locations to be up to date. See "Appendix B - Modifying the CircBack.ini File" for directions on doing this.

10. Appendix E - Changes in this User's Guide

10.1 Changes for Version 16.1

No changes were made.

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