virtua

Integrated Library System

3M Patron SelfCheck Interface

VIRTUA ILS – INTEGRATED LIBRARY SYSTEM

3M Patron SelfCheck Interface
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Table of Contents

Table of Figures

1. Introduction to the 3M™ Patron SelfCheck Interface

T his startup guide explains the features, functions, and configuration of the 3M Patron SelfCheck Interface. The procedures for running the 3M™ SelfCheck™ System are not explained here. For instructions on how to run the 3M SelfCheck System and for information on 3M's Standard Interchange Protocol, Version 2.00 (SIP), see your 3M documentation. The scope of this document is limited to the interaction of the SelfCheck System with the Virtua client and the Virtua Profiler.

The 3M Patron SelfCheck Interface helps further automate your library system by performing repetitive and time-consuming tasks such as checking in and checking out materials, allowing your staff to concentrate on providing more personal and complex services.

The 3M Patron SelfCheck Interface allows the 3M SelfCheck System to communicate directly with Virtua, automatically recording transactions as they are processed. In addition, the 3M SelfCheck Interface is highly flexible, giving you the ability to customize the system to meet your library's needs.

Specifically, the 3M SelfCheck Interface offers the following features:

- Automatic check-out and check-in of library materials. Patrons can use the 3M SelfCheck machine to check in or check out library materials, and Virtua will record the transaction the same as if a staff member manually processed it. In addition, the SelfCheck machine desensitizes and sensitizes material automatically as the transaction is recorded.
- Processing of renewals. If a patron attempts a renewal, Virtua checks the renewal due date against the original due date of the item. If the renewal due date comes before the original due date, the renewal will not proceed. This prevents patrons from shortening the circulation period when inadvertently processing the same item twice.
- The ability to create user profiles for your SelfCheck machines in the Virtua Profiler.
- Processing of fines for overdue items as they are checked in.
- Security features to help prevent card theft or system tampering. If a patron leaves an ID card on the SelfCheck machine, Virtua will record a block in the 007 tag of the patron's record, preventing anyone else from using the card. In addition, if a

patron attempts to tamper with the SelfCheck machine, Virtua will block the patron's account.

> **Note:** If a patron tampers with a SelfCheck machine, Virtua records a lost-card block. Currently, Virtua cannot distinguish between a block for tampering and a block due to a lost card. For information on patron blocks, see the *Virtua Circulation Control/Patron Information User's Guide.*

- Ability to distinguish between regular material and items that may be damaged by exposure to the magnetic desensitizer, preventing accidental erasure of information.
- Ability to handle multiple SelfCheck machines simultaneously.

If your institution has purchased the 3M Patron SelfCheck product, Innovative will ship your Virtua software with SelfCheck functionality already enabled.

2. Defining Profiler Settings for Your SelfCheck Machines

T he Virtua Profiler offers various parameters and settings that are specific to 3M SelfCheck transactions. You will want to configure these settings before you begin performing transactions via your SelfCheck machine. In this chapter, we describe how to configure SelfCheck-related settings in the Virtua Profiler.

This chapter covers the following topics:

⇒ Setting Up User Profiles for Your SelfCheck Machines
⇒ Configuring the 3M Self Check-in Flag
⇒ Configuring the Media Type for Item Classes
⇒ Configuring 3M Error Messages

2.1 Setting Up User Profiles for Your SelfCheck Machines

Using the Virtua Profiler you can create user profiles for your 3M SelfCheck machines. When you create a user profile, all transactions processed by your SelfCheck machines will be assigned a unique operator ID, indicating that the transaction was performed on the SelfCheck machine using the associated user profile.

There are two types of user profiles you can use:

- A user profile for each SelfCheck machine or group of machines.
- A default SelfCheck user profile, to be used by all your 3M SelfCheck machines.

Note: If you do not create a user profile or select one during the log-in process, your SelfCheck machines will log in at the location with the lowest location code value, using an operator ID of **1**. Innovative *strongly* recommends that you create at least one user profile and specify it in your log-in script.

2.1.1 Creating a Machine-specific User Profile

To create a user profile for each machine or a group of machines,

1. Log in to the Virtua Profiler.
2. On the Global Settings tab, double-click SYSTEM.
3. Double-click User Profiles.
4. Double-click Root Group.
5. Highlight the Circulation Group.

The Global Settings tab should look like Figure 2-1.
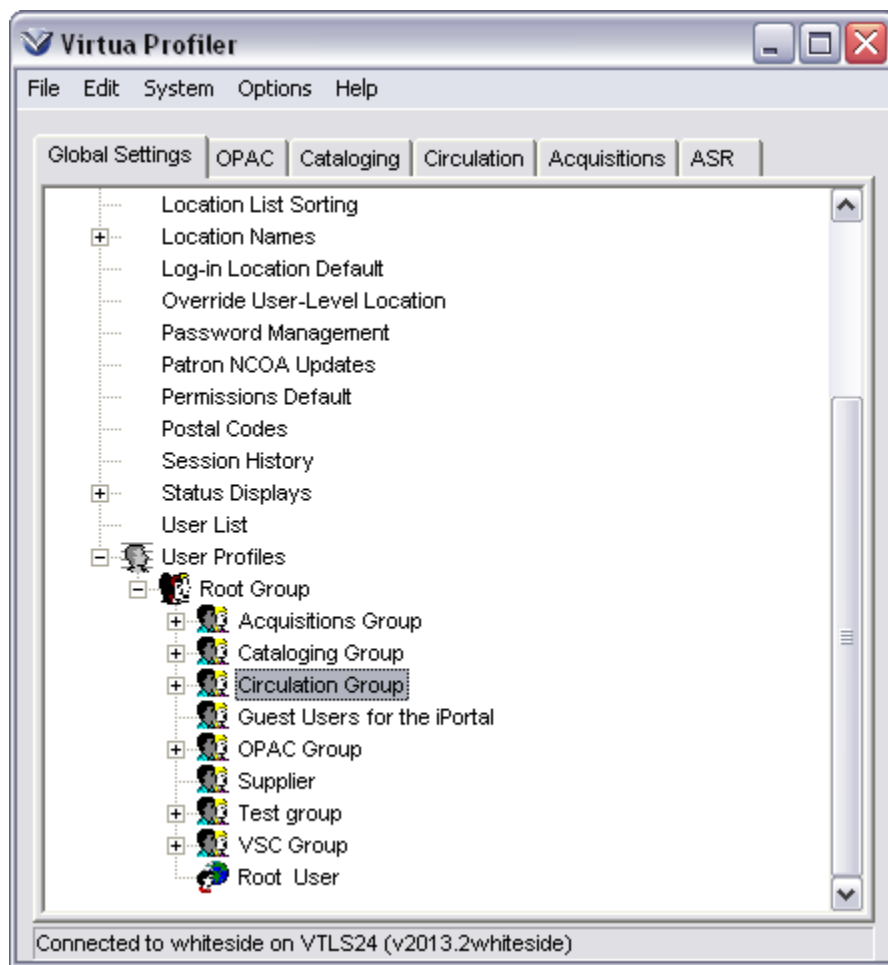
Figure 2-1. Virtua Profiler - Global Settings Tab

6. Click your right mouse button, and then choose Add User from the pop-up menu.

The Add New User window appears (*Figure 2-2*).

Figure 2-2. Virtua Profiler - Add New User Window

7. In the Username text box, type a unique, one-word username.

8. In the Full Name text box, type the full name of the user profile.

9. In the Description text box, type a description of the user profile.

10. In the Log-in Locations list box, click the location that you want to use as the log-in location for ALL transactions performed at the specified SelfCheck machine, and then click the Set Default button.

11. In the Member Groups list box, select any additional user groups to which you want the user to belong. Additionally, use the drop-down list to set the level of access for the user's primary group, which is the Circulation Group.

    Note: The Member Groups settings are not used by the SelfCheck system, and the default settings are sufficient for allowing you to save the profile. But you may edit the defaults if you like.

12. Click the Authentication/Authorization tab, and type a password for the user in the Password and Confirm Password text boxes.

    Note: The full name, description, and password are not used by the SelfCheck system, but Virtua requires that you enter text in these fields before you can save the user profile.

13. Click the Permissions tab, and edit the permissions as desired.

    Note: User permissions are not used by the SelfCheck system, but before you can save the user profile, you must click the Permissions tab and save the default permissions, which are inherited from the Circulation Group. If you try to save the profile without first clicking the Permissions tab, Virtua will generate an error message.

14. Click the Save button.

    The new user profile is saved to the database and appears in the list of Circulation users.

For information on modifying the log-in script of a SelfCheck machine to specify a user profile, see the section "Entering the Log-in Script" in this guide.

2.1.2 Creating a Default SelfCheck User Profile

If you do not want to create a user profile for each of your SelfCheck machines, you can create a single default profile to be used by ALL of your SelfCheck machines.

To create a default user profile to be used by all of your SelfCheck machines,

1. Log in to the Virtua Profiler.

2. On the Global Settings tab, double-click SYSTEM.

3. Double-click User Profiles.

4. Double-click Root Group.

5. Highlight the Circulation Group.

6. Click your right mouse button, and then choose Add User from the pop-up menu.

7. Choose Add User.

    The Add New User window appears (*Figure 2-2*).

8. In the Username text box, type **selfcheck**.

9. In the Full Name text box, type the full name of the user profile.

10. In the Description text box, type a description of the user profile.

11. In the Password and Confirm Password text boxes, type a password for this user.

    Note: The full name, description, and password are not used by the SelfCheck system, but Virtua requires that you enter text in these fields before you can save the user profile.

12. In the Log-in Locations list box, click the location that you want to use as the log-in location for ALL transactions performed at the specified SelfCheck machine, and then click the Set Default button.

13. In the Member Groups list box, select any additional user groups to which you want the user to belong. Additionally, use the drop-down list to set the level of access for the user's primary group, which is the Circulation Group.

    Note: The Member Groups settings are not used by the SelfCheck system, and the default settings are sufficient for allowing you to save the profile. But you may edit the defaults if you like.

14. Click the Permissions tab, and edit the permissions as desired.

    Note: User permissions are not used by the SelfCheck system, but before you can save the user profile, you must click the Permissions tab and save the default permissions, which are inherited from the Circulation Group. If you try to save the profile without first clicking the Permissions tab, Virtua will generate an error message.

15. Click the Save button.

The new SelfCheck profile appears in the list of Circulation users. Each time a SelfCheck machine logs in and the log-in script does not specify a user profile, all transactions will be credited to the default SelfCheck user profile.

2.2 Configuring the 3M Self Check-in Flag

Once the 3M SelfCheck machine is properly configured to communicate with Virtua, you can check out and check in items without making any other changes. However, if your library does not wish to allow patrons to check *in* items through the SelfCheck machine, you can configure the Virtua Profiler to disable this feature.

To disable check-ins from the 3M SelfCheck machine,

1. Log in to the Virtua Profiler.
2. On the Global Settings tab, double-click SYSTEM.
3. Double-click Location Names.

The tree structure expands, as shown in Figure 2-3.
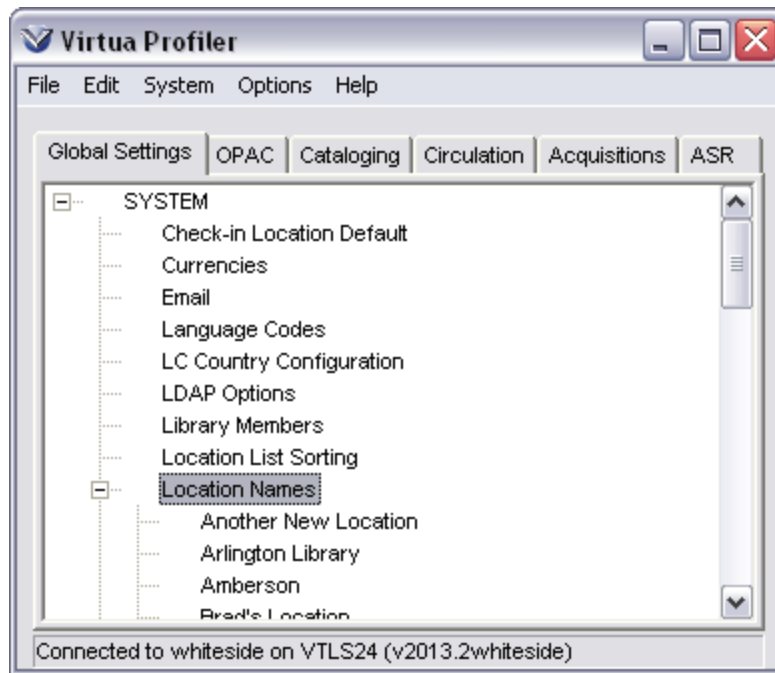
Figure 2-3. Virtua Profiler - Location Names Parameter

4. Double-click the main location for which you want to set the 3M Self Check-in flag.

   Note: The setting you choose for a main location also applies to each of its sublocations.

   The Modify Main Location window appears.

5. Click the Inherited Values tab. (*Figure 2-4*).
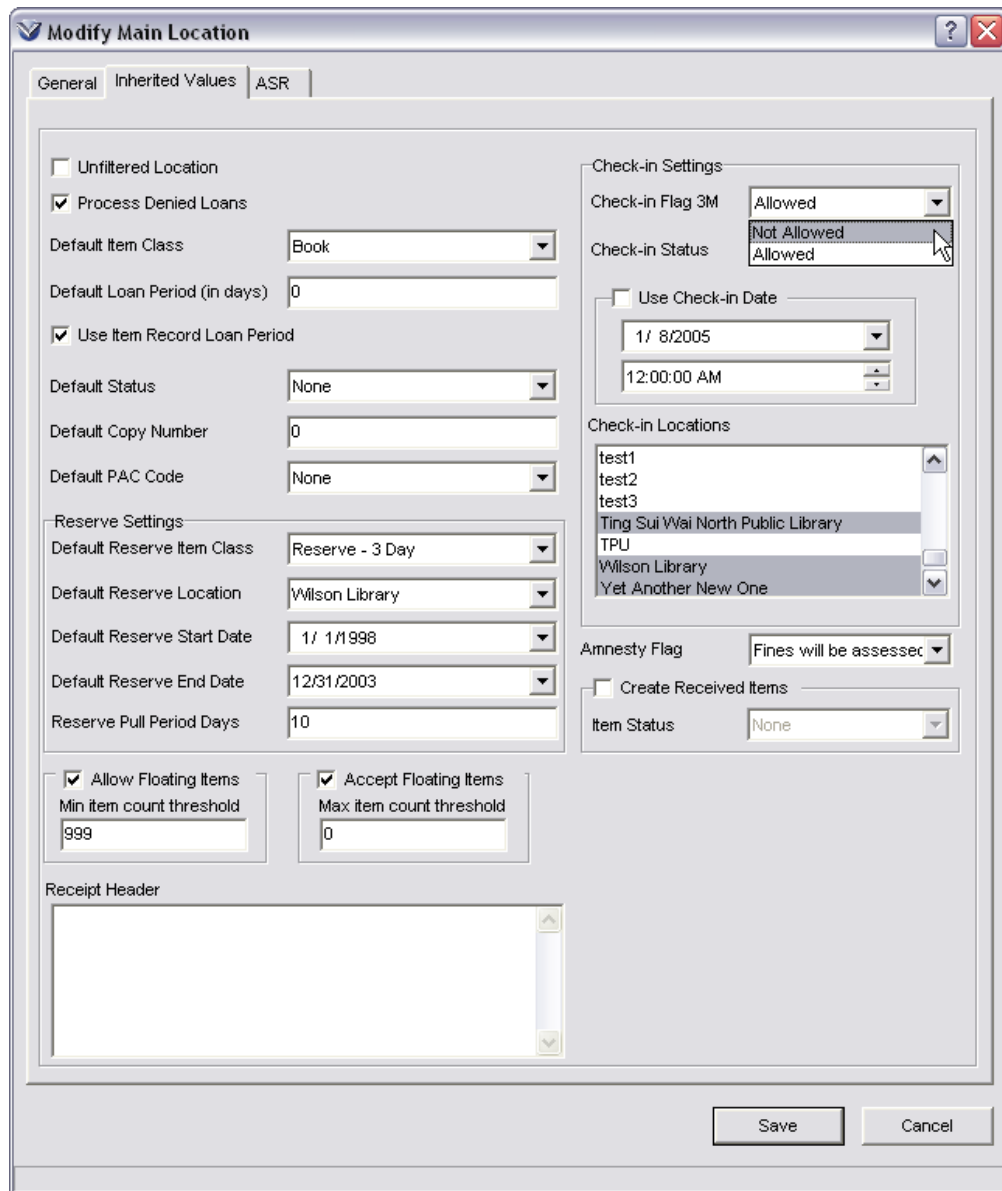
Figure 2-4. Virtua Profiler - Modify Main Location Window

6. In the Check-in Flag 3M drop-down list, choose Not Allowed to disable the check-in function at this location.
7. Click the Save button.

    The window closes, and your changes are saved to the database.

2.3 Configuring the Media Type for Item Classes

To protect your items that may be damaged by magnetic fields, which the SelfCheck machine uses in desensitization, Virtua lets you instruct the SelfCheck machine not to desensitize or sensitize an item that might be damaged from exposure to magnetic fields. You can distinguish items as magnetic or non-magnetic via the Item Class Definitions parameter in the Virtua Profiler.

To set the media type of items,

1. Log in to the Virtua Profiler.
2. Click the Circulation tab.
3. Double-click CIRCULATION.
4. Double-click System Parameters.
5. Double-click Item Class Definitions.

    The Item Class Definitions window appears (*Figure 2-5*).

| Code	Item Class Definition	Class Type	Media Type	Cannot Delete Item
1	Juvenile-Fiction	Regular	Book	☐
39	Juvenile-Non-Fiction	Regular	Book	☐
98	Reserve - 3 Hours	Reserve	Audio Tape *MAGNETIC*	☐
99	Reserve - 1 Day	Reserve	Audio Tape *MAGNETIC*	☐
100	Books	Bookable	Book	☐
101	Reserve - 3 Day	Reserve	Book	☐

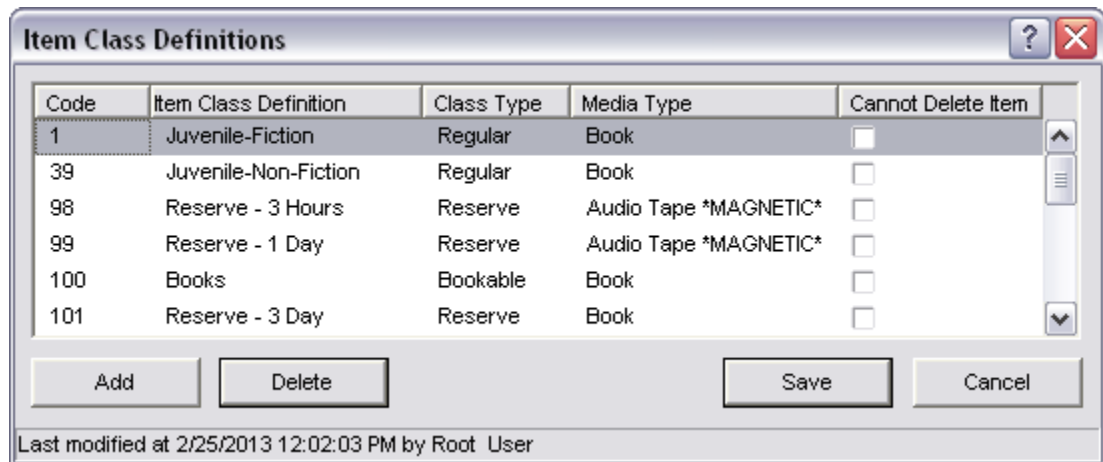Last modified at 2/25/2013 12:02:03 PM by Root User

Figure 2-5. Virtua Profiler - Item Class Definitions Window

6. In the Media Type column, for each item class, select one of the available media types. The *MAGNETIC* designation indicates that items belonging to this item class are sensitive to magnetic fields.
7. Click the Save button.

Your changes are saved to the database.

2.4 Configuring 3M Error Messages

Virtua offers two ways you can configure error messages. You can configure a generic error message or transaction-specific error messages.

2.4.1 Configuring a Generic Error Message

Via the 3M Error Message parameter in the Virtua Profiler, you can configure a generic message that will appear on the 3M SelfCheck Interface when a patron performs an unsuccessful transaction. In this way, you can alert your patrons of failed transactions so that they can request assistance from library staff.

To configure the 3M Error Message,

1. Log in to the Virtua Profiler.
2. On the Circulation tab, double-click CIRCULATION, and then double-click System Parameters.
3. Double-click Circulation Basic Options.

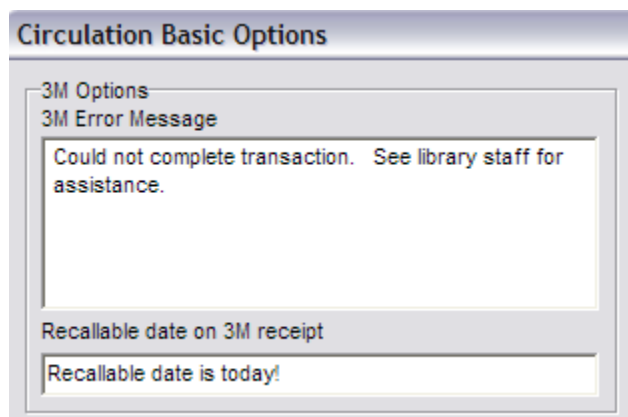   The Circulation Basic Options window appears, a portion of which is shown in Figure 2-6.

Figure 2-6. Circulation Basic Options

4. In the 3M Error Message text box, type the desired message. For example, "We're sorry. We could not complete your transaction. Please see a librarian for assistance."

5. Click the Save button to save your message to the database.

2.4.2 Configuring Transaction-specific Error Messages

Via the Patron Diagnostic Messages parameter in the Virtua Profiler, you can add the diagnostic code and customize/translate the text of a number of messages that the 3M Patron SelfCheck software can generate to explain specific error conditions preventing a patron from checking out or renewing an item.

When a problem occurs in a transaction in the 3mdriver, the software looks for a translated version of the error message and returns that in the SIP response. The language used will be determined by the three-character language code sent in the Patron Status Request (SIP code 23) and Patron Information Request (SIP code 63). The language is saved for as long as the same patron is using the SelfCheck. If a request other than Patron Status or Patron Information is received and contains a different patron identifier, the language is reset to its default value (English).

To configure the Patron Diagnostic Messages,

1. Log in to the Virtua Profiler.
2. On the Circulation tab, double-click CIRCULATION, and then double-click System Parameters.
3. Double-click Patron Diagnostic Messages.

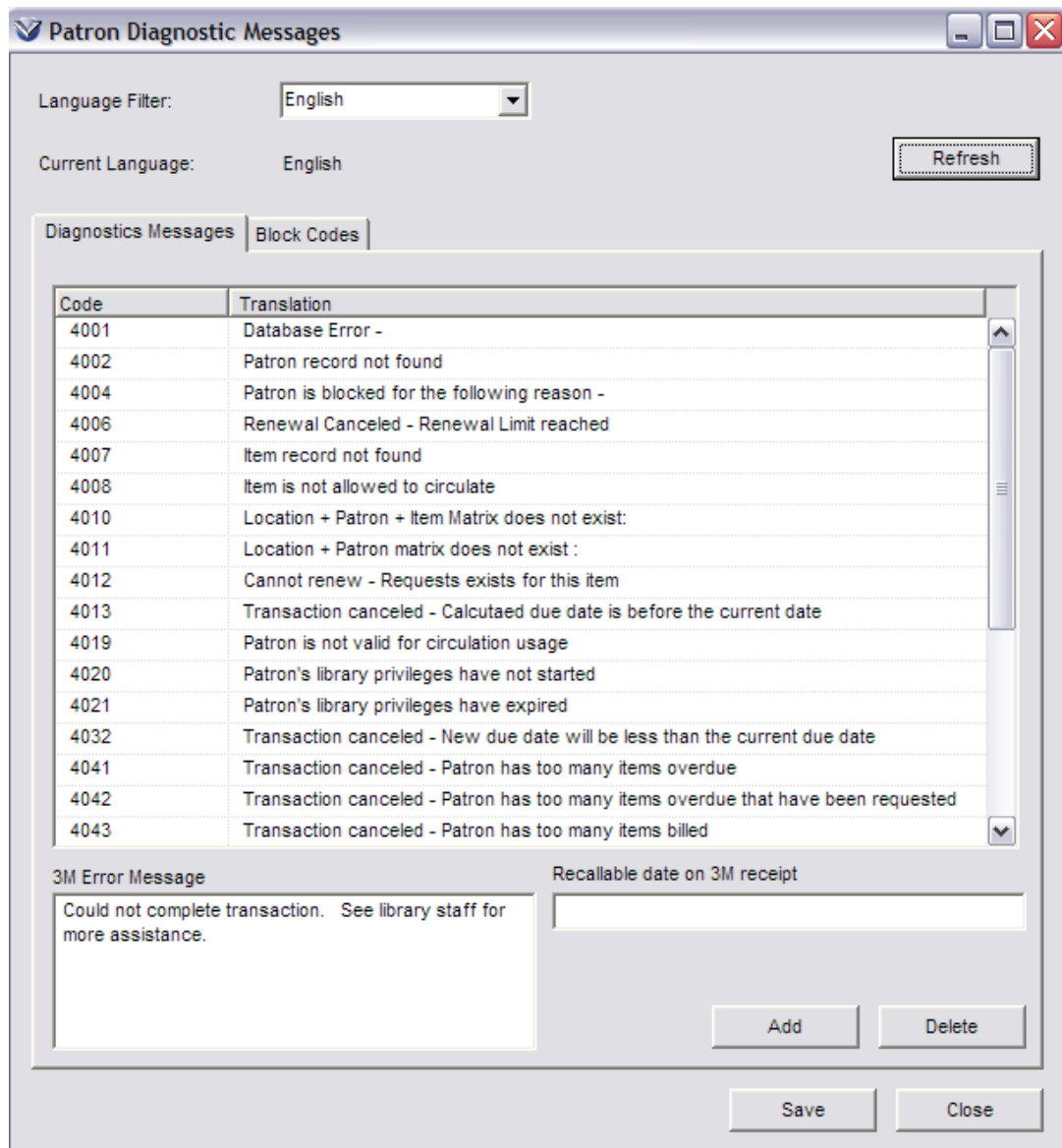The Patron Diagnostic Messages window appears (*Figure 2-7*).

Figure 2-7. Patron Diagnostic Messages Window

4. Type each desired message code and corresponding description/message in the display area. You can translate the diagnostic messages into multiple languages (for details, see the *Virtua Profiler/Circulation Parameters User's Guide*).

5. Click the Save button to save the messages to the database.

2.5 Configuring the Recallable Date on 3M Receipt

On the Circulation Basic Options window, the setting labeled *Recallable date on 3M receipt* allows you to add the recallable date to the 3M Receipt. Adding the recallable date to the 3M Receipt will not affect the display of the due date on the receipt.

The Recallable By date is generated by combining the Guaranteed Circulation period with the Mail Grace period, which you can set via the Location + Patron + Item Matrix. If the recallable date falls on a date the library is closed, Virtua sets the recallable date to the next date the library is open.

To print the recallable date on the 3M receipt,

- On the Circulation Basic Options window (*Figure 2-6*), edit or translate the text in the *Recallable date on 3M receipt* text box.

    Note: By default, the text string "Recallable Date:" appears in the *Recallable date on 3M receipt* text box. The text string will appear as the label adjacent to the recallable date on the 3M Receipt. If you do not wish the recallable date to display on the 3M receipt, leave this text box blank.

3. Setting Up the SelfCheck Machine

The SelfCheck machine needs to have a connection to the Virtua server. Usually this is an Ethernet LAN connection, but a serial connection also works. For information on configuring the connection, refer to your 3M documentation.

Note: If you use an Ethernet connection, you must select Telnet as your communication method.

Before the SelfCheck machine can communicate with Virtua, it must log in as if it were a Virtua user. To facilitate this communication, Virtua provides two scripts (one for logging in and one for logging out) that you must enter into the SelfCheck machine prior to operation. These scripts let the SelfCheck machine automatically log in and log out of Virtua each time the machine is turned on or off. This chapter describes how to enter these scripts.

Note: The check-out date and time printed on 3M SelfCheck receipts are not determined by settings in Virtua. Instead, the 3M driver uses the format specified in the UNIX "locale" settings. For information on modifying this date format, refer to your UNIX documentation.

This chapter covers the following topics:

⇒ Entering the Log-in Script
⇒ Working with 3mdriver.exe
⇒ Entering the Log-out Script

3.1 Entering the Log-in Script

Before entering the log-in script into the SelfCheck machine, you must know three things:

• The Virtua **dbadmin** password.
• The Virtua prompt string.

- The two-digit code of your database, which may not be necessary for some libraries.

Note: There are several different models of the 3M SelfCheck machine, and there may be variations in the way you enter scripts on your machine. For more information on entering scripts on your SelfCheck machine, refer to your 3M documentation.

To enter the log-in script,

1. Access the 3M Send/Expect Editor. Figure 3-1 shows an example of this window. The appearance of your Send/Expect Editor may vary by model.
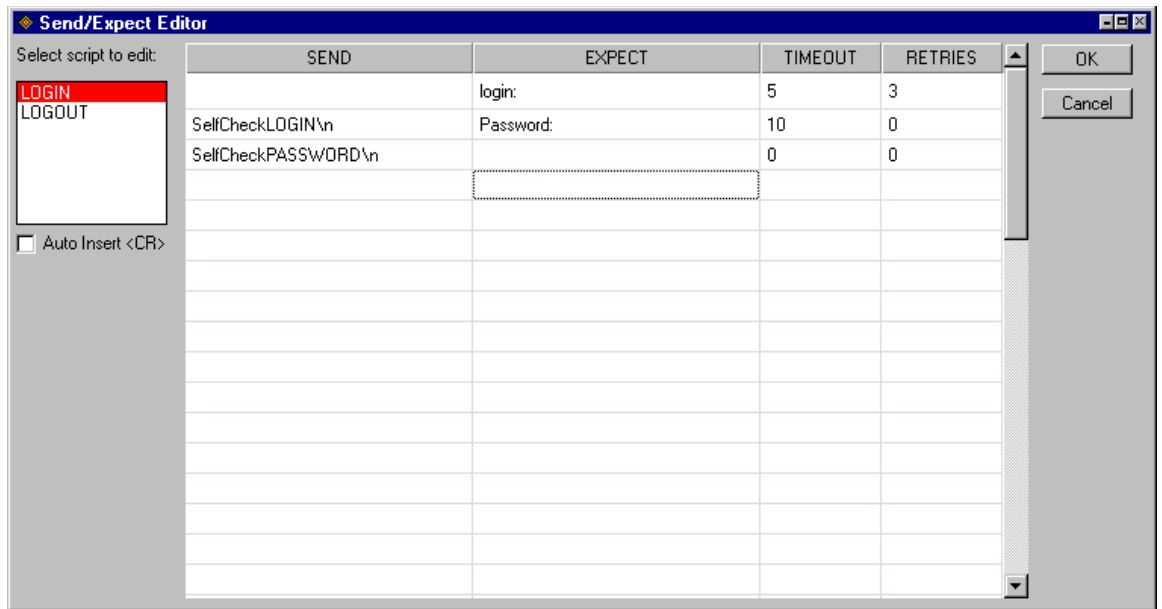

Figure 3-1. 3M Send/Expect Editor (Courtesy 3M)

2. Type the Send and Expect values in you 3M Send/Expect Editor exactly as they appear in the table below (*Figure 3-2*).

Send	Expect
	`login:`
`dbadmin\n`	`Password:`
`[Virtua password]\n`	`TERM`
`vt100\n`	`accessed`
`[two digit database code]\n`	`[Virtua telnet string]`
`export TERM=vt100; reset; stty - echo;\n`	`[Virtua telnet string]`
3mdriver.exe command. For details, see the section "Working with 3mdriver.exe" in this chapter.	

Figure 3-2. Log-in Script

Note:
- The column headings on your Send/Expect Editor may differ from those listed here.
- The values listed in brackets vary by each individual server. An explanation for each variable value in the script is provided below.
- All libraries may not use the two-digit database and the TERM question.

3. Set the Timeout and Retries fields as it suits your network.

3.1.1 Definition of Variable Values Used in the Script

- **Virtua password** - The password you use to log in as **dbadmin** in Virtua.
- **Two-digit database code** - The code of the database you are attempting to log in on.
- **Virtua telnet string** - This string will match the prompt used by your Virtua server. To learn this value, do the following:
    - ♦ Begin the log-in sequence.
    - ♦ Stop when you reach the prompt where you type the command `psdriver.exe`.
    - ♦ The last subdirectory listed in this prompt is the value you enter in the script sequence. For example, if the prompt for running the psdriver is `/usr/vtls/clas01`, then the Virtua telnet string is `clas01`.

3.1.2 Log-in Script for Servers without the Reset Utility

Some servers require a Reset utility to process transactions from a 3M SelfCheck machine. If your server requires this utility and you do not have it, you need to modify your log-in script.

To determine whether or not your server has the reset utility,

1. Log in to your server as **dbadmin**.
2. At the prompt, type **reset**.

   - If you have the Reset utility, the information appearing in your display buffer (the text displaying the previous commands that you ran) disappears, leaving only the UNIX prompt.
   - If you do NOT have the Reset utility, you need to modify to your log-in script to appear as in the table below. **Note:** The modified portion of the script is in italics.

Send	Expect
	`login:`
`dbadmin\n`	`Password:`
`<Virtua password>\n`	`TERM`
`vt100\n`	`accessed`
`<two digit database code>\n`	`<Virtua telnet string>`
export TERM=vt100;stty -echo icrnl;\n	`<Virtua telnet string>`
3mdriver.exe command. For details, see the section "Working with 3mdriver.exe" in this chapter.	

Figure 3-3. Log-in Script for Servers without the Reset Utility

3.2 Working with 3mdriver.exe

As part of the log-in script for your SelfCheck machine, you will need to start the 3M driver, which allows the SelfCheck machine to communicate with Virtua. You can use various command-line options with **3mdriver.exe** to define certain settings and enable various options for your SelfCheck transactions. The following sections describe the format of the **3mdriver.exe** command, and provide details on the available command-line options.

3.2.1 Basic Format of the 3mdriver.exe Command

The simplest form of the **3mdriver.exe** command uses no command-line options:

```
3mdriver.exe 2>3mdriver.err\n
```

This basic command runs the 3M driver using the default **selfcheck** user that you have defined in the Virtua Profiler. If the **selfcheck** user does not exist, Virtua performs all transactions using the location code with the lowest value as the log-in location, and using the operator ID **1**. For details on defining the **selfcheck** user, see the section "Creating a Default SelfCheck User Profile" in this guide.

Additionally, this basic command logs all server output to a file called **3mdriver.err**, which stores error messages and other output from the Virtua server. This file records the information that would display in a telnet window if you manually opened a port for the Virtua client.

You will always type the **3mdriver.exe** command in the seventh row of the log-in script in the Send column of your 3M Send/Expect Editor (*Figure 3-1*). The example below shows how you would specify the basic **3mdriver.exe** command in the log-in script.

Send	Expect
	`login:`
`dbadmin\n`	`Password:`
`[Virtua password]\n`	`TERM`
`vt100\n`	`accessed`
`[two digit database code]\n`	`[Virtua telnet string]`
`export TERM=vt100; reset; stty -echo;\n`	`[Virtua telnet string]`
`3mdriver.exe 2>3mdriver.err\n`	

Figure 3-4. Log-in Script with 3mdriver.exe Command Specified

You can modify the **3mdriver.exe** command in various ways to specify various options for your SelfCheck transactions. These options are described in the following sections.

3.2.2 Logging Diagnostic Messages

When you use the command described in the previous section, Virtua records all server output in a file called **3mdriver.err**. This file stores error messages and other output from the Virtua server. This file records the information that would display in a telnet window if you manually opened a port for the Virtua client.

If desired, you can also set up logs to record input and output from the 3M SelfCheck machine. To do this, use the following command:

```
tee 3mdriver.in | 3mdriver.exe 2>3mdriver.err | tee 3mdriver.out\n
```

When you use this command, information sent from the SelfCheck machine to the Virtua server will be stored in a file called **3mdriver.in**. Information sent from the Virtua server to the SelfCheck machine will be stored in a file called **3mdriver.out**. To interpret these files you need to have access to the 3M Standard Interchange Protocol document (available from 3M).

Alternatively, you can use the **-m** option when running **3mdriver.exe** to create a log file of SIP messages. For more information on this **3mdriver.exe** option, see the section "Creating a Message Log (-m Option)" in this guide.

3.2.3 Command-line Options for 3mdriver.exe

You can use various command-line options with **3mdriver.exe** to define settings for your SelfCheck transactions. Command-line options are always specified immediately after the **3mdriver.exe** portion of the command:

```
  3mdriver.exe [options] 2>3mdriver.err\n
```

The following sections describe some of the command-line options that are available for use with **3mdriver.exe**.

Note: In the following sections, the examples are based on the basic command format described in the section "Basic Format of the 3mdriver.exe Command." But you can also specify command-line options when logging diagnostics as described in the previous section. To do so, simply specify any desired command-line options directly after the **3mdriver.exe** portion of the command:

```
tee 3mdriver.in | 3mdriver.exe [options] 2>3mdriver.err | tee
3mdriver.out\n
```

The subsections in this section include:

3.2.3.1 Patron Authentication Options

3.2.3.1.1 Enabling Alternate Barcode User (-A Option)

By default, Virtua assumes that any patron barcode sent from a SelfCheck unit is the patron barcode from the 015 tag subfield $a.

However, if your patrons commonly use the patron barcode in the 016 tag subfield $a, you can use the **3mdriver.exe** command-line option **-A** [--use-alternate-patron-barcode] to tell Virtua to validate the barcode received from the SelfCheck machine against the value in the 016 tag subfield $a of the patron record. There are three variations on the **-A** command-line option:

* To check incoming patron barcodes against the barcode value in the 016 tag subfield $a, type:

  `3mdriver.exe -A 2>3mdriver.err\n`

  HKPL only: The **3mdriver.exe** command-line option **–A** will use the 017 tag subfield $a for the patron barcode.

* To validate incoming patron barcodes against the patron barcodes stored in both the 015 tag subfield $a and the 016 tag subfield $a, type:

  `3mdriver.exe -A1 2>3mdriver.err\n`

  Important: When you use the **–A1** option, if a barcode matches the primary barcode in one patron record and the alternate barcode in another, the patron will be unable to use the SelfCheck.

* To validate incoming patron barcodes against the barcode stored in the 015 tag subfield $a only (default behavior), type:

  `3mdriver.exe -A0 2>3mdriver.err\n`

3.2.3.1.2 Enabling Patron PIN Checking (-P Options)

You can use a command-line option to enable numeric PIN checking using the 019 tag subfield $b in the patron record. The **–P** option enables checking of the patron PIN only.

To enable PIN validation, type:

```
3mdriver.exe -P 2>3mdriver.err\n
```

If you use the **–P** option, the **3mdriver.exe** will prompt the system to authenticate if the data in the submitted "AD" SIP field matches the data in the 019 tag subfield $b, regardless of the location where the patron barcode is being checked.

3.2.3.1.3 Enabling Patron Password Checking (-p Option)

You can use a command-line option to enable alphanumeric password checking. Using the **-p** option enables checking of the patron password only for ALL requests that accept passwords, including status requests AND check-out and renewal requests. This means that a patron will need to submit a password each time they attempt a transaction that accepts a password. If you use the **–p** option, the **3mdriver.exe** will prompt the system to authenticate if the data in the submitted "AD" SIP field matches the data in the 015, 016, or 017 tag subfield $c.

To enable password validation, type:

```
3mdriver.exe -p 2>3mdriver.err\n
```

3.2.3.1.4 Enabling Patron Password and/or PIN Checking (-p and -P Options)

You enable validation of *either* the alphanumeric password or numeric PIN. For the system to make the verification on both the 015 tag subfield $c and 019 tag subfield $b, execute **3mdriver.exe** using both the **–p** option and **–P** option.

To enable authentication of either a password or PIN, type:

```
3mdriver.exe –p -P 2>3mdriver.err\n
```

3.2.3.1.5 Enabling Password/PIN Invalid Message When Valid Patron Barcode Used (-b Option)

By default, when a patron enters a valid patron barcode but an invalid password or PIN, the system will indicate that the patron was not found. In such a situation, if, instead, you want the system to return a message indicating that the password or PIN is invalid, use the **–b** option when running **3mdriver.exe**. Innovative recommends that you use this option with caution, as it can give those phishing for patron barcodes an indication that they have found a valid patron ID.

To enable the invalid password/PIN message, type:

```
3mdriver.exe -b 2>3mdriver.err\n
```

3.2.3.1.6 Skipping the Date of Issue Check (-D Option)

HKPL Only: By default, Virtua checks the date of issue (VQ field) when authenticating using the HKID. The -D [--do-not-check-date-of-issue] option lets you skip the date of issue check, which is necessary for some third-party SIP applications.

To not check the Date of Issue when authenticating using HKID, type:

```
3mdriver.exe -D 2>3mdriver.err\n
```

3.2.3.2 Information Display Options

3.2.3.2.1 Omitting Disputed Items in the Charged Items List (-j Option)

If you wish to exclude disputed items from the AU field of the Patron Information Response (i.e., the patron information that Virtua sends to the SelfCheck system), use option **–j [--omit-disputed-in-charged-list]**.

To omit disputed items in the Charged Items List, type:

```
3mdriver.exe –j
```

3.2.3.2.2 Specifying Telephone or SelfCheck Mode (-L Option)

If your library uses both i-tiva and a SelfCheck, and you want the transactions handled through each to be logged separately in the Transaction Log, you can run **3mdriver.exe** with the **-L** option to specify whether the instance of **3mdriver.exe** is for the SelfCheck or i-tiva.

- –L 0 specifies that the transactions are taking place at a SelfCheck.
- –L 1 specifies that the transactions take place via telephone (i-tiva).

- To specify that the transactions against this instance of **3mdriver.exe** are occurring at a SelfCheck, type:

  ```
  3mdriver.exe –L 0 2>3mdriver.err\n
  ```

- To specify that the transactions against this instance of **3mdriver.exe** are being performed via i-tiva, type:

  ```
  3mdriver.exe –L l 2>3mdriver.err\n
  ```

3.2.3.2.3 Omitting Waived and Disputed Items from Overdue Items (-o Option)

If you wish to omit waived and disputed items from the overdue count and from the list of overdue items that are part of the patron information response display, you can do so by running **3mdriver.exe** with the **-o** option.

To omit waived and disputed items from the list of overdue items, type:

```
3mdriver.exe –o
```

3.2.3.2.4 Preventing Renewal of Overdue Items (-B Option)

The **-B [--no-overdue-renewal]** option lets you deny any attempts to renew an overdue item.

To prevent the renewal of items that are overdue, type:

```
3mdriver.exe -B
```

3.2.3.2.5 Telling 3mdriver.exe to Display Tag 245 Instead of Tag 880 (-T option)

By using the **-T [--no-alternate-title]** option with **3mdriver.exe**, you can prevent alternate titles from being returned in SIP messages.

The **-T** option takes no arguments, so to specify that the program always return the primary display title, type:

```
3mdriver.exe -T 2>3mdriver.err\n
```

3.2.3.2.6 Specifying Subfields for Item Title (-k Option)

The **-k [--title-subfields-to-display]** option lets you specify which subfields are displayed as part of an item's title. This option takes as an argument the subfields you want displayed from the item's Title field.

For example, the following command would display subfields $a, $b, $n, and $p:

```
3mdriver.exe -k abnp
```

When you do not use this option, **3mdriver.exe** returns all fields in the 245 tag.

3.2.3.2.7 Preventing Alerts for Check-ins at Locations Other than the Shelving Location (-t option)

By default, the 3M SelfCheck machine issues an alert when an item is checked in at a location other than its shelving location, causing Virtua to assign the item a status of In Transit. If desired, however, you can use the **-t** option to prevent an alert from being issued in such a situation.

To prevent Virtua from issuing an alert for check-ins at locations other than the shelving location, type:

```
3mdriver.exe -t 2>3mdriver.err\n
```

3.2.3.2.8 Sending the Item Class ID in the CR Field (-w Option)

By default, the SIP Checkin Response message that Virtua sends back to the SelfCheck will contain collection code information in the CR field. (Formerly, the system placed

the item class ID in the CR field by default.) The option **–w [--use-item-class]** lets you change the current default behavior so that the system behaves as it used to.

To have Virtua send the item class ID in the CR field, which is normally reserved for the collection code, type:

3mdriver.exe –w

- When the **–w** option is used, the CR field in the Checkin Response will be populated with the item class ID of the item that was checked in.
- When this option is omitted, the CR field will be populated with the collection code of the item that was checked in, or, if the item does not have a collection code, the field will be omitted from the Checkin Response.

3.2.3.2.9 Viewing Hard-coded Server Error Messages

By default, the Virtua server only returns those messages configured and defined in Appendix A. However, you can enable Virtua to display more messages using the -v [--verbose] option. Note that these messages are not always user-friendly and will always appear in English. This setting is best suited for use in troubleshooting.

To enable verbose messaging, type:

3mdriver.exe –v

3.2.3.2.10 Including a Timestamp with Due Date (-K Option)

The **-K [--time-with-due-dates]** command-line option lets you include time information with the due date and recallable date that are returned in the Due Date (AH) field of SIP messages such as check-in and check-out responses.

To include a time stamp in the Due Date (AH field), type:

3mdriver.exe –K

3.2.3.2.11 Sending the Book Loan Quota in the Checkout Response (-J Option)

HKPL Only: The **-J** option allows HKPL users to specify that the remaining book loan quota value be included in the Checkout Response SIP message. This makes it

possible for the remaining book loan quota to be displayed on the SelfCheck terminal screen and included on the printed 3M receipt. When you run 3mdriver.exe using the -J option, the remaining book loan quota is included in the Checkout Response message as "LQx", where x represents the calculated book loan quota.

To include the remaining book loan quota in the Checkout Response message, type:

```
3mdriver.exe -J
```

3.2.3.3 3mdriver.exe Behavior Options

3.2.3.3.1 Specifying a Delimiter (-d Option)

The **-d [--delimiter]** command-line option lets you specify a delimiter to use in SIP messages. The SelfCheck machine MUST be using the same delimiter you specify here.

For instance, to specify the pipe character (|) as a delimiter, type:

```
3mdriver.exe –d |
```

3.2.3.3.2 Specifying a Character Set In the Log-in Script (-c Option)

By default, Virtua sends information in the UTF-8 character set. Older SelfCheck machines may not provide support for UTF-8, and some information that the Virtua server sends might be unreadable to these older SelfCheck machines. If this is the case with your SelfCheck, you need to specify a different output character set in the log-in script via the **-c** option.

The -c option uses the following format:

-c [character set code]

Where **[character set code]** is the code associated with the output character set that you want to use. You can find a complete list of character set codes in the *System Management Reference Guide*.

For example, to run **3mdriver.exe**, specifying Windows Cyrillic as the output character set, you might type:

```
3mdriver.exe -c 18 2>3mdriver.err\n
```

3.2.3.3.3 Disabling Error Messages (-e Option)

By default, Virtua sends any error messages to the SelfCheck machine. However, if you would like Virtua to not send error messages to the SelfCheck AND your SelfCheck machine is configured to not display error messages, you can use the **-e [--error-detection]** to disable error detection. Most users will not want to use this option.

To disable error detection, type:

```
3mdriver.exe -e
```

3.2.3.3.4 Using SelfCheck's Provided Language (-H Option)

By default, messages that Virtua sends back to the SelfCheck unit use the language indicated as the patron's preferred language (defined in the patron 100 or 110 tag subfield $a). If you want Virtua to send back messages using the language provided by the incoming SIP messages (i.e., the language used by **3mdriver.exe** in its messages), use option **–H [--use-provided-language]**.

To have Virtua return messages in the language provided in incoming SIP messages, type:

```
3mdriver.exe –H
```

If you use the **–H** option and the provided language is unknown or undefined, Virtua will use the default English version in its responses.

3.2.3.3.5 Allowing Use of the SIP Login Message (-l Option)

By default, the SIP server requires no log-in. You can require a log-in, however, by using the -l option. If used, the SIP Login message (as defined in the SIP2 protocol) must be the first message sent from the client (3M SelfCheck machine) to the SIP server upon startup. A valid username and password must be provided in the SIP Login message before any other messages will be processed.

If you want to require the use of the SIP Login message, type:

```
3mdriver.exe -l 2>3mdriver.err\n
```

For details about SIP messages, see "Appendix A - SIP Messages Supported by Virtua" in this guide.

3.2.3.3.6 Creating a Message Log (-m Option)

If you wish to create a log of all incoming and outgoing SIP messages, you can do so by running **3mdriver.exe** with the **-m** option, and specify a filename for your message log. This option creates a log for all SIP messages.

If you want to create a SIP message log, type:

```
3mdriver.exe –m [filename]
```

This option can be used instead of the tee option explained in the section "Logging Diagnostic Messages" in this guide.

Note: This option can be used with telnet, serial, and socket connections.

3.2.3.3.7 Overriding the Need for the ACS Status Message to be the First Status Message (-n Option)

If you wish to override the requirement that the ACS status message be the first message sent to the server, you can run **3mdriver.exe** with the **-n** option. This is useful when communicating with a device that may not strictly adhere to SIP rules.

To override the need for the ACS status message to be the first status message to be sent to the Virtua server, type:

```
3mdriver.exe –n
```

3.2.3.3.8 Enabling 3mdriver.exe to Act as a Server (-S Option)

Important: This option is not necessary for the majority of SelfCheck users. It is useful for those users using a TCP/IP SIP connection, which includes those using BlueSocket® software. Please see the relevant third-party product documentation as to whether this step is necessary for you.

If your SelfCheck or other application communicates via TCP/IP or otherwise needs to communicate directly with the server instead of through a Telnet shell, you can run **3mdriver.exe** with the **-S** option to ensure that **3mdriver.exe** will listen constantly on a specified port. To use this option, you must specify the port number that will be used for communication with **3mdriver.exe**. For example:

```
3mdriver.exe -S 1111
```

tells **3mdriver.exe** to in effect run as a server on port 1111.

3.2.3.3.9 Telling 3mdriver.exe to Print a String When Ready (-s Option)

If your SelfCheck or other application requires notification before beginning to send communications to the server, you can use the **-s** option to instruct **3mdriver.exe** to print a string when the server is ready to receive communications.

To use this option, type **-s** followed by your desired string when running **3mdriver.exe**. For instance, typing

```
3mdriver.exe -s XXXXXX
```

will cause **3mdriver.exe** to return the string "**XXXXXX**" when it has completed the startup process and is ready to start processing transactions. This step is usually not necessary for Self Check transactions, but this particular string is often used with Talkingtech's i-tiva messaging product.

Note: This option will not work if you also enable the **-S** option.

3.2.3.3.10 Allowing Virtua-defined Languages (-V Option)

Some SelfCheck machines are capable of using non-SIP2-standard languages. In accordance, **3mdriver.exe** can be instructed to accept input in a non-standard language, as long as that language is recognized by Virtua.

If your library uses a non-SIP2-standard language, you can use the -V command-line option to tell Virtua to expect Virtua-defined languages.

The **-V** option takes no arguments, so to allow Virtua-defined languages via the SelfCheck, type:

```
3mdriver.exe -V 2>3mdriver.err\n
```

Note:
- Currently the Innovative-defined languages include Simplified and Traditional Chinese only.
- This setting affects only the Virtua side of the SelfCheck transaction; the SelfCheck must be configured separately to handle any non-standard language.

3.2.3.3.11 Providing Command-line Options in a Configuration File (-Z Option)

The **-Z [--config-file]** option allows you to provide command-line options inside of a configuration file and then pass that file to **3mdriver.exe** on the command-line. In this way, you can hide configured options from anyone who is able to pull up a process list on the server.

Usage:

```
3mdriver.exe –Z config.txt
```

Where **config.txt** is the name of the configuration text file on the server that contains configured options. Each configured option must 1) be used in its long form (i.e., **--no-checkin-class** rather than **–x**), 2) have a value after the **=** sign, and 3) reside on a separate line in the file.

Sample Configuration File:

```
login-mode=2
server=6884
```

```
no-alternate-title=1
password=1
```

If the same option is provided both in a configuration file and on the command line, the value on the command line will take precedence.

Turning off Error Detection (-e Option)

3.2.3.4 Transaction Options

3.2.3.4.1 Specifying a Virtua User (-u Option)

The **-u** option lets you specify a Virtua user to be used for SelfCheck transactions. The **-u** option uses the following format:

  -u [username]

Where **[username]** is the username associated with the user profile that you want to use. You should specify the username of a user profile that you defined specifically for a SelfCheck machine in the Virtua Profiler. For details, see the section "Creating a Machine-specific User Profile" in this guide.

For example, to run **3mdriver.exe** with the username option, you might type:

  3mdriver.exe -u UnitA 2>3mdriver.err\n

Where **UnitA** is the username given to the user profile defined for SelfCheck Machine A.

Notes:
- If you run **3mdriver.exe** without the username option, transactions will be performed using the default **selfcheck** user that you have defined in the Virtua Profiler. For details, see the section "Creating a Default SelfCheck User Profile" in this guide.
- To run **3mdriver.exe** successfully, you must either specify a valid Virtua username via the **-u** option OR have the **selfcheck** user defined in the Profiler when you run the executable without the username option.

3.2.3.4.2 Allowing Requested Items to be Checked Out (-r Option)

By default, you cannot check out requested items via the 3M SelfCheck machine. If desired, however, you can use the **-r** option to allow requested material to be checked out.

The **-r** command-line option takes no arguments, so to allow check-outs on requested items, type:

```
3mdriver.exe -r 2>3mdriver.err\n
```

Note:
- To allow *renewals* of requested items, in the Virtua Profiler, you must set the Renewal Override parameter to Yes.
- Even if you choose this option, you still will not be able to check out material that has been *trapped* for a request.

3.2.3.4.3 Allowing Requested Items to be Checked In (-R option)

By default, you cannot check in requested items via the 3M SelfCheck machine. If desired, however, you can use the **-R** option to allow requested material to be checked in on a given machine.

The **-R** command-line option takes no arguments, so to allow check-ins on requested items, type:

```
3mdriver.exe -R 2>3mdriver.err\n
```

3.2.3.4.4 Enabling In-house Check-outs (-i Option)

By default, the 3M SelfCheck machine performs only regular check-outs. If the regular check-out fails (i.e., if the regular check-out loan period is not defined in the Virtua Profiler), the transaction will be canceled.

If you want to enable in-house check-outs and have the option of applying Virtua's in-house check-out loan period, you must run the 3M driver using the **-i** option.

The **-i** option takes no arguments, so to enable in-house check-outs, type:

```
3mdriver.exe -i 2>3mdriver.err\n
```

The **-i** option is only the first step in performing in-house check-outs. For additional information about in-house check-out options, see the section "A Note about In-house Check-outs" in this guide.

3.2.3.4.5 Overriding the Display of Recalled Items List (-I Option)

When you request patron information, the system's normal response includes a list of recalled items and a count of those items. If you do not wish to see the list of recalled items as part of the patron information display, you can prevent Virtua from checking for and returning recalled items by running **3mdriver.exe** with the **-I** option. This is useful for improving response time when there are recalls on many of the items that patrons have checked out.

To override the check for recalled items when displaying patron information, type:

```
3mdriver.exe –I
```

3.2.3.4.6 Allowing Check-outs on Items Linked to Agency Requests (-f Option)

By default, you cannot check out agency requested items (or items that can satisfy an agency request) via the 3M SelfCheck machine. If desired, however, you can use the **-f** option to override the default behavior and allow agency requested material to be checked out.

To allow check-outs on items linked to agency requests, type:

```
3mdriver.exe –f
```

3.2.3.4.7 Allowing Renewals on Items Linked to Agency Requests (-g Option)

By default, you cannot renew agency requested items (or items that can satisfy an agency request) via the 3M SelfCheck machine. If desired, however, you can use the **-g** option to override the default behavior and allow agency requested material to be renewed.

To allow renewals on items linked to agency requests, type:

```
3mdriver.exe –g
```

3.2.3.4.8 Renewing Specific Categories of Items During a Renew All Function (-C Option)

When used with an argument, the **–C [--renew-all-categories]** option lets you specify those categories of items (which appear on the Activity tab of the Patron Information window) that can be renewed during a Renew All request via SIP. When no argument is specified, Virtua will renew all or any of the following categories:

0 – Checked Out
1 – Overdue
2 – Billed
3 – Recalled
4 – Recalled Overdue
5 – Lost
6 – Damaged
7 – Requested
8 – Requested Overdue

- If you specify any category as an argument, only items in that category will be renewed.
- If the –C option is omitted, all checked out items will be renewed.

For example, if you want Renew All to renew only those items that appear in the patron's Checked Out, Overdue, and Recalled categories, type:

```
3mdriver.exe -C 013
```

3.2.3.4.9 Prohibiting Check-ins By Item Class (-x Option)

The **-x [--no-checkin-class]**option allows you to specify one or more item classes and prevent items from those classes from being checked in through the current instance of **3mdriver.exe**.

For example, the following command would prohibit check-in for items with an item class ID of 100, 200, or 300:

```
3mdriver.exe -x 100 -x 200 -x 300
```

When an item is denied check-in because it has a prohibited item class, a diagnostic message ("This item's class cannot be checked in through SIP") is returned in the Screen Message (AF) field of the Checkin Response message.

3.2.4 About Combining Command-line Options

You can combine command-line options as needed to define multiple settings at log-in. When using multiple command-line options, enter them together after the **3mdriver.exe** portion of the command, separating each command and argument with a space.

For example, if you want to use the **-u**, **-c**, **-r**, and **-i** options, you would type the following command:

```
3mdriver.exe -u UnitA -c 18 -r -i 2>3mdriver.err\n
```

According to this command . . .

- Transactions performed at this machine will be credited to the user UnitA.
- Output will be mapped to the Windows Cyrillic character set.
- Check-outs will be allowed on requested material.
- In-house check-outs are enabled.
- There will be an error log named **3mdriver.err** that contains any errors and other log information from the Virtua server.

3.3 Entering the Log-out Script

Note: There are several different models of the 3M SelfCheck machine, and there may be variations in the way you enter scripts on your machine. For more information on entering scripts on your SelfCheck machine, refer to your 3M documentation.

To enter the log-out script into the SelfCheck machine,

1. Access the 3M Send/Expect Editor (*Figure 3-1*).

2. Type the following values in the log-out menu *exactly* as they appear in the table below (*Figure 3-5*).

Sequence to send	Sequence to wait for
`ZZAY0AZFDE7\r`	`<Virtua telnet string>`
`exit\n`	

Figure 3-5. Log-out Script

Note:
- Type the values *exactly* as they appear in the table above.
- The headings on your screen may differ from those listed here.
- The values listed in brackets vary by each individual library. A definition is given for each in the section titled "Entering the Log-in Script."

After you enter these values, the SelfCheck machine can log in and log out automatically, as it is turned on or off.

4. Appendix A - SIP Messages Supported by Virtua

Your 3M SelfCheck machine communicates with Virtua via SIP or NCIP messages, which are standardized commands that tell Virtua what to do (e.g., perform a check-out). Virtua, in turn, responds to the SelfCheck machine by returning an appropriate SIP or NCIP message, which tells the 3M interface what to display to the user. Some messages have optional fields, which your library can configure as needed. This section explains which SIP messages are supported by Virtua.

While the configuration of these messages and fields is beyond the scope of this document, you will need to be aware of which SIP messages are supported by Virtua so that you can configure your system properly. The messages and fields of the SIP2 protocol that Virtua supports and does not support are listed below.

Fields in the Unsupported/Ignored column are fields that Virtua does not use. When the SIP client sends these fields to Virtua, the software ignores them. When one of these unsupported fields is required by the SIP protocol, the information that Virtua sends to the client is a generic value that is not specific to the transaction.

For details on configuring your SelfCheck machine to send these messages to Virtua, refer to your 3M documentation.

Note: In the table below, the *optional* SIP fields are printed in *italics*.

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Block Patron	01	Institution ID (AO) Patron Identifier (AA)	Card Retained Transaction Date Blocked Card Message (AL) Terminal Password (AC)
Checkin	09	Institution ID (AO) Item Identifier (AB) Return Date No Block *Cancel (BI)*	Current Location (AP) Terminal Password (AC) Transaction Date *Item Properties (CH)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Checkin Response	10	Alert Institution ID (AO) Item Identifier (AB) Magnetic Media OK Permanent Location (AQ) Resensitize Title Identifier (AJ) Transaction Date Due Date (AH) Alert Type (CV)** Call Number (CS)** Collection Code (CR)** Destination Location (CT)** Hold Patron ID (CY)** Hold Patron Name (DA)** Status Code (VS)* Contents of Tag 716 $a (VC)* Fines/Fees (BV)*** *Media Type (CK)* *Screen Message (AF)*	*Item Properties (CH)* *Patron Identifier (AA)* *Print Line (AG)* *Sort Bin (CL)*
Checkout	11	Fee Acknowledged (BO) Institution ID (AO) Item Identifier (AB) NB Due Date No Block Date of Issue (VQ)* Check-out Type (VT)* *Patron Password (AD)* *Cancel (BI)*	SC Renewal policy Terminal Password (AC) *Item Properties (CH)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Checkout Response	12	Item Identifier (AB) Title Identifier (AJ) Due Date (AH) Transaction Date Institution ID (AO) OK Magnetic Media Patron Identifier (AA) Renewal OK Desensitize Call Number (CS)** Transaction Reference Number (VR)* *Media Type (CK)* *Screen Message (AF)* *Diagnostic Code (VD)* *Print Line (AG)*	*Item Properties (CH)* *Transaction ID (BK)* *Fee Type (BT)* *Security Inhibit (CI)* *Currency Type (BH)* *Fee Amount (BV)*
Hold	15	Hold Mode (+) Transaction Date Institution ID (AO) Patron Identifier (AA) Date of Issue (VQ)* *Expiration Date (BW)* *Pickup Location (BS)* *Patron Password (AD)* *Hold Type (BY) (3 - specific copy of a title)* *Item Identifier (AB)*	Hold Mode (-) (*) *Title Identifier (AJ)* *Terminal Password (AC)* *Fee Acknowledged (BO)* *Hold Type (BY) (1, 2, 4)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Hold Response	16	OK Available Transaction Date Institution ID (AO) Patron Identifier (AA) Transaction Reference Number (VR)* *Expiration Date (BW)* *Pickup Location (BS)* *Item Identifier (AB)* *Title Identifier (AJ)* *Screen Message (AF)* *Print Line (AG)*	*Queue Position (BR)*
Item Information	17	Institution ID (AO) Item Identifier (AB)	Transaction Date Terminal Password (AC)
Item Information Response	18	Circulation Status Transaction Date Item Identifier (AB) Title Identifier (AJ) *Screen Message (AF)* Call Number (CS)** Collection Code (CR)** *Due Date (AH)* *Hold Pickup Date (CM)* *Owner (BG)* *Media Type (CK)* *Permanent Location (AQ)* *Current Location (AP)*	Security Marker Fee Type *Hold Queue Length (CF)* *Recall Date (CJ)* *Currency Type (BH)* *Fee Amount (BV)* *Item Properties (CH)* *Print Line (AG)*
Item Status Update	19	(none)	Transaction Date Institution ID (AO) Item Identifier (AB) Item Properties (CH) *Terminal Password (AC)*

3M Patron SelfCheck Interface (v. 16.1) 43

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Item Status Update Response	20	(none)	Item Identifier (AB) Item Properties OK Transaction Date *Item Properties (CH)* *Print Line (AG)* *Screen Message (AF)* *Title Identifier (AJ)*
Patron Status Request	23	Institution ID (AO) Patron Identifier (AA) Patron Password (AD) Language Date of Issue (VQ)*	Transaction Date Terminal Password (AC)
Patron Status Response	24	Patron Status Transaction Date Institution ID (AO) Patron Identifier (AA) Personal Name (AE) Screen Message (AF) Language *Valid Patron (BL)* *Valid Patron Password (CQ)*	*Fee Amount* *Currency Type* *Print Line*
Patron Enable	25	(none)	Transaction Date Institution ID (AO) Patron Identifier (AA) Terminal Password (AC) *Patron Password (AD)*
Patron Enable Response	26	(none)	Patron Status Language Transaction Date Institution ID (AO) Patron Identifier (AA) *Valid Patron (BL)* *Valid Patron Password (CQ)* *Screen Message (AF)* *Print Line (AG)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
End Patron Session	35	(none)	Transaction Date Institution ID (AO) Patron Identifier (AA) *Terminal Password (AC)* *Patron Password (AD)*
End Session Response	36	(none)	End Session Institution ID (AO) Patron Identifier (AA) Transaction Date *Screen Message (AF)* *Print Line (AG)*
Renew	29	No Block Nb Due Date Institution ID (AO) Patron Identifier (AA) Date of Issue (VQ)* *Item Identifier (AB)* *Patron Password (AD)*	Third Party Allowed Transaction Date *Fee Acknowledged (BO)* *Item Properties (CH)* *Terminal Password (AC)* *Title Identifier (AJ)*
Renew Response	30	Desensitize Due Date (AH) Institution ID (AO) Item Identifier (AB) OK Patron Identifier (AA) Renewal OK Magnetic Media Title Identifier (AJ) Transaction Date Transaction Reference Number (VR)* *Media Type (CK)* *Screen Message (AF)*	*Currency Type (BH)* *Fee Amount (BV)* *Fee Type (BT)* *Item Properties (CH)* *Print Line (AG)* *Security Inhibit (CI)* *Transaction ID (BK)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Fee Paid	37	Institution ID (AO) Patron Identifier (AA) Fee Amount (BV) Payment Type *Fee Identifier (CG)*	Transaction Date Fee Type Currency Type *Terminal Password (AC)* *Transaction ID* *Patron Password (AD)*
Fee Paid Response	38	Institution ID (AO) Patron Identifier (AA) Payment Accepted Transaction Date Fee Identifier (CG) Transaction Reference Number (VR)* *Fee Information (VA)** *Screen Message (AF)*	*Print Line (AG)*
Patron Information	63	Patron Identifier (AA) Institution ID (AO) Language Summary Date of Issue (VQ)* *Patron Password (AD)* *Start Item (BP)* *End Item (BQ)*	Transaction Date *Terminal Password (AC)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Patron Information Response	64	Charged Items Count Hold Items Count Institution ID (AO) Language Overdue Items Count Patron Identifier (AA) Patron Status Personal Name (AE) Recall Items Count Transaction Date Unavailable Holds Count Fine Items (AV) Fine Items Count Patron Deposit Account Balance (VB)* Patron Birthdate (PB)* Patron Type (PA)* *Charged Items (AU)* *E-mail Address (BE)* *Fee Amount (BV)* *Hold Items (AS)* *Home Address (BD)* *Home Phone Number (BF)* *Overdue Items (AT)* *Patron ID (PC)** *Recall Items (BU)* *Screen Message (AF)* *Unavailable Hold Items (CD)* *Valid Patron (BL)* *Valid Patron Password (CQ)*	Fine Items Count *Hold Items Limit (BZ)* *Overdue Items Limit (CA)* *Charged Items Limit (CB)* *Currency Type (BH)* *Fee Limit (CC)* *Print Line (AG)*
Renew All	65	Institution ID (AO) Patron Identifier (AA) Patron Password (AD) Date of Issue (VQ)*	Transaction Date *Terminal Password (AC)* *Fee Acknowledged (BO)*

SIP2 Message	Message ID	Supported SIP2 Fields	Unsupported/Ignored SIP2 Fields
Renew All Response	66	OK Renewed Count Unrenewed Count Transaction Date Institution ID (AO) Transaction Reference Number (VR)* *Renewed Items (BM)* *Unrenewed Items (BN)* *Diagnostic Code (VF)** *Screen Message (AF)*	*Print Line (AG)*
Login	93	Login User ID (CN) Login Password (CO) *Location Code (CP)*	UID Algorithm PWD Algorithm
Login Response	94	OK	
Request SC Resend	96	(message has no fields)	
Request ACS Resend	97	(message has no fields)	
ACS Status	98	Checkin OK Checkout OK Date / Time Sync Institution ID (AO) On-Line Status Protocol Version Supported Messages (BX) *Library Name (AM)*	ACS Renewal Policy Status Update OK Off-line OK Timeout Period Retries Allowed *Terminal Location (AN)* *Screen Message (AF)* *Print Line (AG)*
SC Status	99	Protocol Version Status Code	Max Print Width

Explanations of notations:

* Fields with this notation are not part of the SIP2 protocol, but are Innovative-defined fields:

- **Fee Information** appears only if the Print Detailed Item Information check box is selected on the Fines tab of the Receipt/Slip Setup window in the Virtua

Profiler. (For more information, see the *Virtua Profiler/Circulation Parameters User's Guide*.) The Fee Information field includes the following information:
Fee Name
Original Balance
Amount Paid
Remaining Balance
Title (if applicable)
Barcode (if applicable)

- **Check-out Type** lets you specify the check-out type of an item. For details, see the in this appendix.
- **Patron Birthdate** contains the information found in tag 100 subfield $d of the patron record
- **Patron Type** contains the patron type code as defined in the 030 tag.
- **Status Code** is returned when a check-in is denied due to an item having a status listed in the -X command-line option.
- **Contents of Tag 716 $a** is returned when the following conditions are met:
    - A requested item is checked in at its pickup location.
    - The requesting patron has data in tag 716 subfield $a of the patron record.
- **Patron ID** contains the Patron ID in the 001 tag of the patron record.
- **Date of Issue** contains the Date of Issue (DOI) obtained from the MASC Client software for a particular MASC Card authentication.
- **Transaction Reference Number** (VR) contains the Transaction Reference number associated with a logged circulation transaction. The VR field is contained in such patron diagnostic messages as 4044 (*Transaction canceled - Patron owes too much money*) and 4041 (*Transaction canceled - Patron has too many items overdue*).
- **Diagnostic Code** (BN) contains the diagnostic code that corresponds to an unrenewed item.

** Fields with this notation are not part of the SIP2 protocol. Rather, they are supported via the SIP2.0 book sorting extension.

***The field with this notation, **Fines/Fees**, is a SIP2 field but is not part of the SIP2 protocol for the Checkin Response. If the patron owes no fines or fees for the item, the field is omitted.

4.1 A Note about In-house Check-outs

By default, your SelfCheck machine performs regular check-outs only. However, Innovative supports various options that allow you to enable and perform in-house check-outs, if desired.

The first step in performing in-house check-outs via the SelfCheck machine is to run the 3M driver using the **-i** command-line option, which enables in-house check-outs. If you do not use the **-i** option, the SelfCheck machine will perform only regular check-outs.

After you enable in-house check-outs via **3mdriver.exe**, you can give your patrons the option of selecting the check-out type (in-house or regular) via the SelfCheck interface. The check-out type will be sent to Virtua as part of the check-out message (message ID 11) by way of the Innovative-defined Check-out Type field, which uses the field identifier VT. The valid values for the VT field are 0 (for regular check-out) and 1 (for in-house check-out).

- If the value in the VT field is 0 (regular check-out), or undefined, and the item qualifies for a regular check-out, the regular check-out loan period will be used.
- If the value in the VT field is 1 (in-house check-out), or if the item does not qualify for a regular check-out, the in-house check-out loan period will be used.

5. Appendix B - Using NCIP Messages with the 3M SelfCheck

Your 3M SelfCheck machine communicates with Virtua via SIP or NCIP "messages," which are standardized commands that tell Virtua what to do (e.g., perform a check-out). Virtua, in turn, responds to the SelfCheck machine by returning an appropriate SIP or NCIP message, which tells the 3M interface what to display to the user. This section explains which NCIP messages are supported by Virtua and how to enable NCIP communication on your Virtua server.

5.1.1 NCIP Messages Supported by Virtua

While the configuration of these messages and fields is beyond the scope of this document, you will need to know which NCIP messages are supported by Virtua in order to configure your system correctly. Below are the NCIP messages supported by Virtua:

Initiation Message	Response Message
Authenticate User	Authenticate User Response
Check In Item	Check In Item Response
Check Out Item	Check Out Item Response
Create User Fiscal Transaction*	Create User Fiscal Transaction Response*
Lookup Item	Lookup Item Response
Lookup User	Lookup User Response

* Create User Fiscal Transaction only supports assessment of a Booking Fine.

5.2 Enabling Virtua to Use NCIP for 3M SelfCheck Communication

In order to use NCIP communication, you will need to run the script **ncipd.exe**. **To run this script,**

1. Log in to your server as **dbadmin**.
2. Type **ncipd.exe** followed by the appropriate parameters, as listed below:

NCIP Option Code	Description	Usage	Notes
-p	Port number to use for NCIP communication	-p [integer]	This value can be any available port number.
-i	Read message from standard input	-i	This value does not accept arguments.
-f	Read message from this file	-f [filename]	
-o	Write response to standard output	-o	This value does not accept arguments.
-w	Write response to this file	-w [filename]	
-l	Name of log file	-l [log file name]	This parameter must be used when running **ncipd.exe**.
-u	Virtua user for login	-u [username]	For instructions on creating User Profiles, see the section "Setting Up User Profiles for Your SelfCheck Machines" in this guide.
-r	Allow requested items to be checked out	-r	This value does not accept arguments. This value should be used only if the same option was chosen when running **3mdriver.exe**. For information on **3mdriver.exe**, see the section "Command-line Options for 3mdriver.exe" in this guide.

NCIP Option Code	Description	Usage	Notes
-R	Allow requested items to be checked in	-R	This value does not accept arguments. This value should be used only if the same option was chosen when running **3mdriver.exe**. For information on **3mdriver.exe**, see the section "Command-line Options for 3mdriver.exe" in this guide.
-I	Use in-house check-out if regular check-out fails	-I	This value does not accept arguments. This value should be used only if the same option was chosen when running **3mdriver.exe**. For information on **3mdriver.exe**, see the section "Command-line Options for 3mdriver.exe" in this guide.

6. Appendix C - Changes in this Guide

6.1 Changes for Version 16.1

"Sending the Book Loan Quota in the Checkout Response (-J Option)" - Added this section to describe the new **-J** option, which allows HKPL users to specify that the book loan quota be included in the Checkout Response message.

6.2 Changes for Version 15.2

"Appendix A - SIP Messages Supported by Virtua" - Added "Language" to the list of supported SIP2 fields for the following messages: Patron Information (63), Patron Status Request (23), and Patron Status Response (24). Also added "Fee Acknowledged" to the list of supported SIP2 fields for the Checkout (11) message.

Index

0

007 tag of patron record · 2
016 tag subfield $a, in patron record · 22

2

245 tag, display of · 26

3

3M documentation · 16
3M Error Message parameter · 12
3M Error Message window (fig) · 12
3M error messages, configuring · 12
3M Patron SelfCheck Interface · *See* SelfCheck Interface
3M Self Check-in flag · 9
3M SelfCheck Machine · *See* SelfCheck Machine
3M Send/Expect Editor · 17, 20, 37
3M Standard Interchange Protocol document · 21
3mdriver.err · 20, 21
3mdriver.exe
    -A option · 22
    -b option · 24
    -B option · 25
    -c option · 28
    -C option · 36
    combining command-line options · 37
    command format · 20
    command-line options · 21
    -d option · 28
    -D option · 24
    -e option · 29
    -f option · 35
    -g option · 35
    -H option · 29
    -i option · 34
    -I option · 35
    -j option · 24
    -J option · 27
    -k option · 26
    -K option · 27
    -l option · 29
    -L option · 25
    -m option · 30
    -n option · 30
    -o option · 25
    -p option · 23
    -P option · 23
    -r option · 34
    -s option · 31
    -S option · 31
    -t option · 26
    -T option · 26
    -u option · 33
    -v option · 27
    -V option · 32
    -w option · 26
    working with · 19
    -x option · 36
    -Z option · 32
3mdriver.in · 21
3mdriver.out · 21

A

-A option · 22
ACS Status message · 47
ACS status message, overriding requirement to be first message · 30
Add New User window (fig) · 5
Add User menu item · 7
agency requests
    overriding default behavior · 35
alerts at check-in, preventing · 26
allowing check-ins · 8, 52
alternate patron barcodes
    using for check-outs · 22
Authenticate User message, NCIP · 50

B

-b option · 24
-B option · 25
barcodes
    using alternates for patrons · 22
Block Patron message · 39
blocks
    for lost card · 1
    for system tampering · 1
BlueSocket® · 31

C

-c option · 28
-C option · 36
changes to the guide · 53
character set, specifying · 28