

Add-On Technologies, Inc.

# DynaCash™

Installation and Text Capture Setups  
for Dispensers & Recyclers



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# How DynaCash Works

## 1. Start the DynaCash Software and Sign On – (Close DynaCash to sign-off)

**CC-1000 System** - The User Number is entered in the PC window. The user then signs on at the CC-1000 terminal with the same user number and a PIN number. The CC-1000 system requires that the user also signs off at the CC-1000 terminal after closing the DynaCash program on the PC.

**CC-5000 System** – The user may sign on at the window with both their User Number and PIN Number. Optionally, they may sign on at the CC-5000 terminal with their User Number and PIN Number.

The sign-on window minimizes to the taskbar and the DynaCash software runs in the background until it is invoked with a hotkey.

## 2. Hit the Mixed or Specifics Hotkey to Dispense – The user processes their transactions the same as usual. When the user has a transaction with a cash back amount showing on their screen, they hit either a Mixed or specifics hotkey on their keyboard.

When the Hotkey is pressed, the DynaCash software collects info from the app at that moment and examines it for an Amount Trigger. If it is found, it looks for a non-zero cash back amount in the proper position. If that is also found then any Qualifier, No-Go, Trans #, or Acct # triggers are looked for if they were set up at installation time. **It is these triggers and amount fields that need to be set up with DynaSetup that are the main focus of this document!**

If a Mixed hotkey was pressed, DynaCash sends the cash back amount to be dispensed as a preset mix of bills.

If the Specifics hotkey was pressed, DynaCash pops up a secondary window that allows the user to choose the mix of bills to be dispensed for the customer.

Our default hotkey for a mixed dispense is the F11 key. The default for a Specifics dispense is F12. These keys can be set at installation time to any key, or combination of keys, that are not being used by the application.

## 3. Hit the Deposit Hotkey to Initiate a Deposit – Hitting the Deposit hotkey when the Deposit window is showing starts the Deposit process. DynaCash screens prompt the user to feed bills into the recycler and guides them along until the amounts are automatically entered into the application.

## 4. The Transaction is Logged - A journal printer keeps a log of all transactions, bill inventory adjustments, manager actions, and errors. It is also stored in memory so it can be retrieved later if necessary. Reports are printed at the end of the day for balancing. Bill Inventory is also held in memory and is part of the balancing report.

# About DynaSetup

The DynaSetup utility is only used when initially installing DynaCash. It is used to: setup the Hotkeys, set the com port if connecting to a LM-2000, capture screens, and to set options for different situations that may arise with different teller apps.

## DynaCash Setup Main Window

The first screen that appears when DynaSetup is opened contains options for:

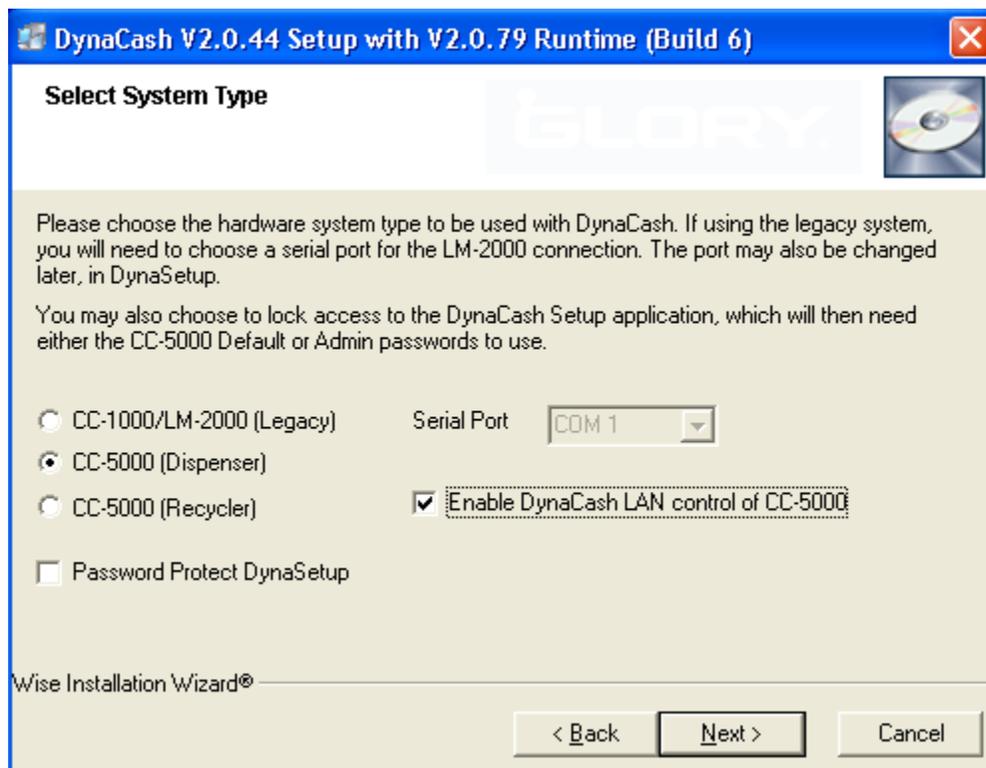
- Capture Engine to be used
  - Java Support
- Configurations
  - Setting System Type / Com Port (on systems that need it)
  - Recycler “Deposit” options
  - Assignment of “Hotkeys”
  - Assignment of “Categories”
  - Assignment of “Workstations”
- Diagnostics and Testing
- Enabling Default EJ View
- Choosing Denominations in use
- Enabling a Non-Cash Entry Box
- Settings to Prevent Duplicate Dispenses
- Setting App Priority
- Setting User Name as Teller or Cashier
- Various Runtime Options for special cases

# Loading DynaCash Software

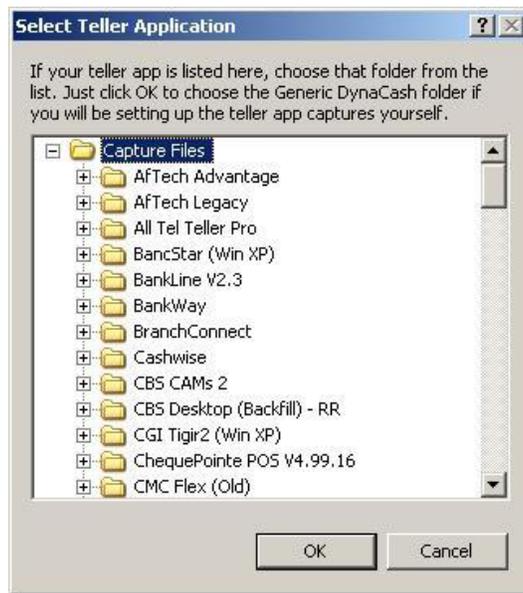
- Admin Rights are required for the DynaCash Software installation.
- Requires Windows 2000 or newer Windows operating system.
- CC-5000 should be unplugged or powered off at software installation time when the USB drivers are pre-installed.

## Software Installation

1. Insert DynaCash CD. If it doesn't autostart, use Windows Explorer to locate and double click on DynaCashSetup.exe on the DynaCash CD.
2. After the greeting window the Select System Type window appears. Check the proper system type. If the "Password Protect DynaSetup" box is checked, the Admin password will be required to enter DynaSetup. Click Next.



3. The next screen allows you to choose your Teller Application from the list. If you know the Teller Application that you are using, look for it in the list. If your Teller Application is not in the list, choose "Generic DynaCash".



4. The next screen allows you to choose any additional support programs that may be required for your application. If the previous screen showed an additional program was required for the Teller Application selected, you may check the box for that application here. The additional support program will be installed after the regular DynaCash installation is completed.
5. Note that the Textract may be evaluation versions that will require a registered version be installed. If a registered version is not installed, DynaCash will quit working when the evaluation version expires. Registered copies of Textract can be obtained at [Structurise.com](http://Structurise.com).
6. The next screen provides a default installation location of C:\ProgramFiles\DynaCash. If an alternate location is desired, click on "Browse" and select it.
7. The next screen allows the Start Menu listing to be changed. You may also choose to start DynaCash automatically by checking "Add DynaCash to Startup Folder".
8. Check next to start the installation.

## For Server Installs

It is possible to store the DynaCash database out on a server or in a local file server to allow for multiple instances of DynaCash to use the same database. As long as the pc has access to the server in the INI file the path can be set under the database section to allow DynaCash to access the database. Pathing Examples:

[Database]

Database Name=X:\applications\DynaCash.mdb

Or

[Database]

Database Name=\\Server2008\applications\DynaCash.mdb

# Starting DynaSetup

Launch DynaSetup utility from the Windows Start Menu/ All Programs/ DynaCash / DynaSetup

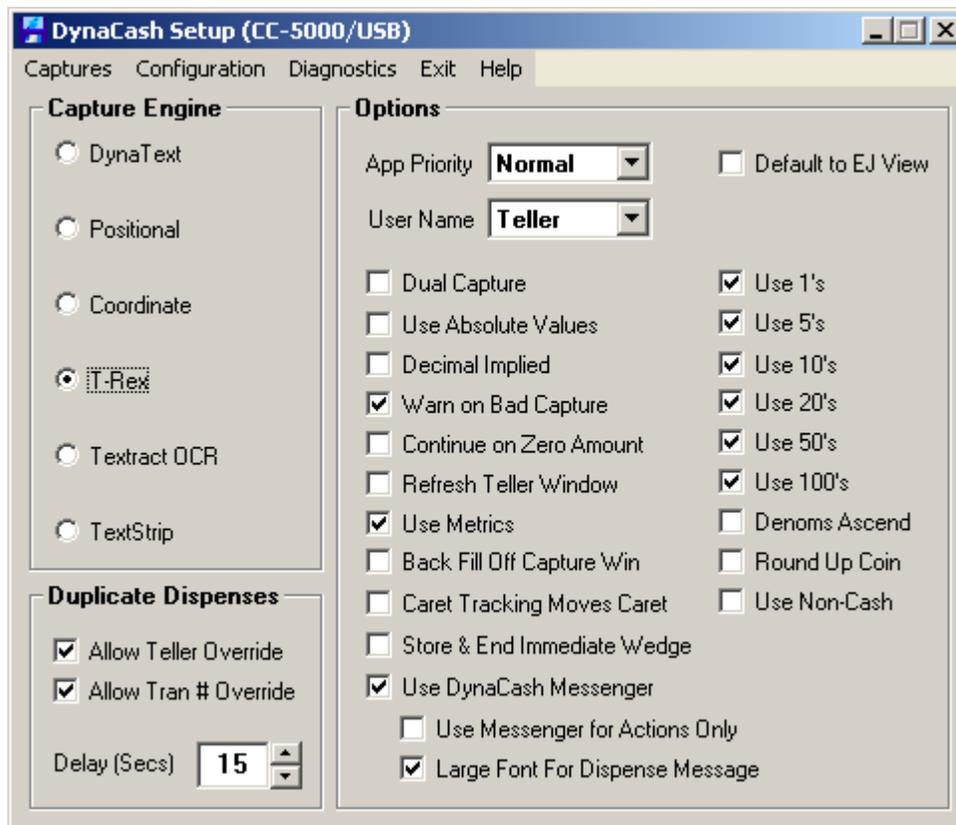
## DynaCash Captures Window

The Captures window appears when “Captures” at the top of the DynaSetup main window is selected. It is different according to the Capture Engine selected in the main window.

It is here that all the Captures are made and the Triggers and Dollar Amount fields are marked.

The general steps to be taken to set up DynaCash Screen Captures are as follows:

1. **Evaluate the customer’s application** to determine which screens will be necessary to dispense from, and Deposit into (see Evaluate the Application on page 20).
2. **Capture all necessary screens** determined from step 1.
3. **Mark the captures.** At the least, an amount trigger and amount field need to be identified for dispenses. Deposits require a deposit trigger be identified. It may also be necessary to mark Qualifier or No-Go triggers or a Fee field.
4. **Test** using “Test Sample” in DynaSetup. Then test in DynaCash.



# Set Capture Engine Type

Select the desired “Capture Engine” on the DynaSetup “main” window.

- DynaText
- Positional Mode
- Coordinate Mode
- T-Rex Mode
- Textract OCR String Capture Mode
- TextStrip String Capture Mode

## DynaText Mode

A String Capture method that uses an Element Id from the program to use as a title for the string of text that is captured. We use the DynaSetup utility to mark the trigger words and amounts that will be needed by DynaCash. The String Capture methods are portable from computer to computer.

## Positional Mode

Positional Mode is often a good starting point when trying to determine what Capture Engine to use for a customer’s application. It is also the default Capture Engine that is set when Generic DynaCash is installed. Positional and Coordinate modes are built into DynaCash and don’t require any additional support program to be installed.

## Coordinate Mode

A method to determine a physical position on the screen where the field is located. Coordinate mode is specifically aimed at applications that have positions returned by the Windows operating system that change under certain circumstances. As long as the physical position on the screen is not changing, Co-ordinate mode still reads from the correct field.

## T-Rex Mode

A String Capture method uses various methods to examine the application window and return a “String” of text. Out of that text we scan for triggers that indicate a cash out/deposit amount. We use the DynaSetup utility to mark the trigger words and amounts that will be needed by DynaCash. The String Capture methods are portable from computer to computer.

## Textract OCR String Capture

Generally the last choice due to the fact that it is expensive, and there can be registration issues that the manufacturer doesn’t address on a timely basis. Sometimes, though, it is the method that works best and it is necessary to use it.

## TextStrip – Graphical Method

**TextStrip** is set up using images from the app. A font set is built that is an exact graphical match of the font in use by the application in the amount fields. A graphical or positional trigger is used to identify the screen. TextStrip is not always portable from computer to computer.

## Set Configuration Type

Click “Configuration” on the menu bar in the DynaSetup “main” window. A drop-down menu displays the main configuration choices:

First, Select System and choose an appropriate Machine Model.

## Set System Type / Set Com Port

Select system type and choose a Machine Model.

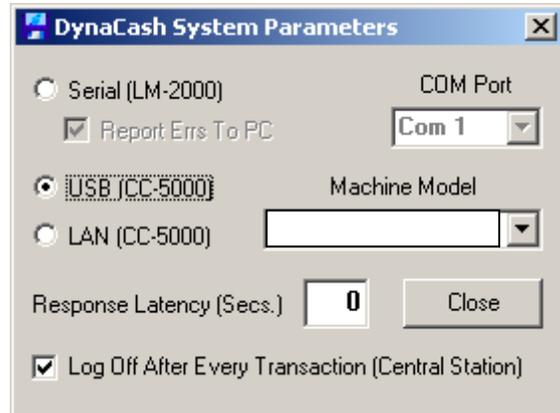
**COM Port** - If the system type is “Serial (LM-2000)”, choose the Com port that the LM-2000 will be connected to under “COM Port”.

**Report Errors To PC** – Enables a pop up window at the teller pc to report errors to the user.

**Response Latency (Secs.)** – If network traffic is such that communications to the CC-5000 are often “timing out” and disconnecting the user, then the CC-5000 can be set to allow additional response time (in seconds) after network commands are sent.

This setting can also apply to USB CC-5000 installations.

**Log Off After Every Transaction (Central Station)** – When selected, will log off DynaCash after a transaction has been completed.

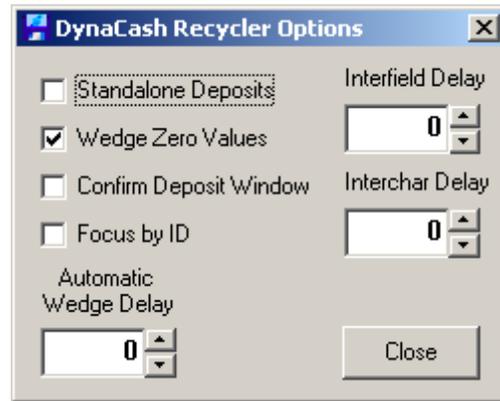


# Recycler “Deposit” Options

Click “Recycler” on the drop-down menu in the DynaSetup “configuration” window. The following window will show. From this setup window, you may setup a Recycler for Standalone Depositing, or to permit backfill “wedging” of the deposited bill values directly into the Teller application Deposit window.

**Standalone Deposits** – Disables the count value “wedging” back into the application. This allows the Recycler to accept currency without setting up Deposit Triggers or keystroke actions. It could also allow the system to be set where dispenses are initiated with a hotkey, but Deposit entries are typed into the application manually.

**Wedge Zero Values** – (Default) When doing a Deposit and a denomination doesn’t have a value, a zero is entered for that denomination. Un-checking this would cause the field to be skipped over instead.



**Confirm Deposit Window** –When doing a Deposit, DynaCash will ensure that the teller app window has not been switched to another window, during the time the Deposit hotkey was first pressed and the time the totals are ready to wedge into the app. Some teller apps require this to be unchecked anyway, even if the window doesn’t change. This should be unchecked (on a trial basis) any time DynaCash doesn’t send the deposit counts into the teller app.

**Focus By ID**- When doing a Deposit wedge or Backfill, this captures the ID of the Cursor position when the hotkey is pressed. When the Transaction is finished and is about to wedge the totals, it places the cursor in the exact same position as where it was when the hotkey was pressed.

**Interfield Delay** - [msec] Delay applies to all Deposits. This should always be tried at zero first. Allows a changeable delay time to be added between wedging actions. This can be helpful for PC’s or applications that don’t accept extremely quick keystrokes. Delays can be set from 0 – 255 millisecond between entry fields or macro actions (Example: 250 msec=1/4 second, 100 msec=1/10 second, etc.).

**Interchar Delay** - [msec] Delay applies to all Deposits. This should always be tried at zero first. Allows a changeable delay time to be added between wedging actions. This can be helpful for PC’s or applications that don’t accept extremely quick keystrokes. Delays can be set from 0 – 255 millisecond between entry fields or macro actions (Example: 250 msec=1/4 second, 100 msec=1/10 second, etc.).

**Automatic Wedge Delay** - [sec] Delay applies to all Deposits. This should always be tried at zero first. Allows a changeable delay before wedging actions. This can be helpful for PC’s or applications that don’t accept extremely quick entries into the application. Delays can be set from 0 – 30 seconds before wedging totals into the application.

# Hotkey Assignment

Next click “Hotkeys” on the drop-down menu in the DynaSetup “configuration” window. The following window will show:

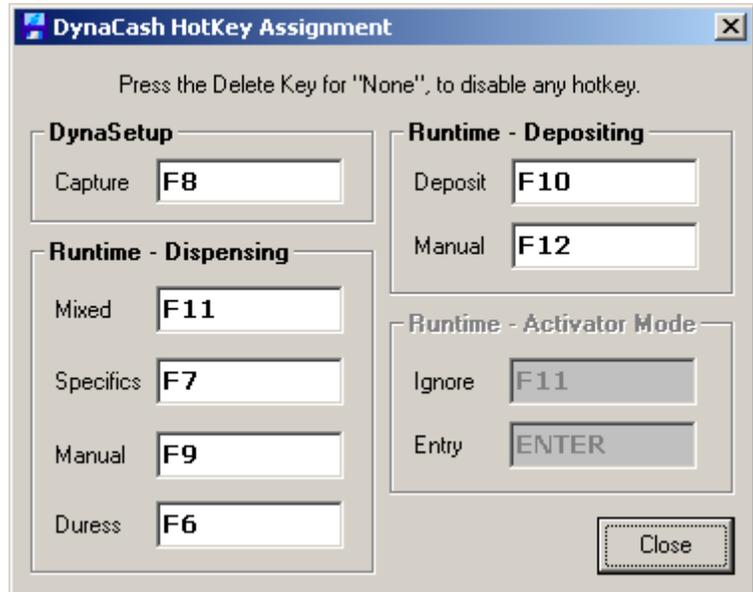
## Identify Useable Hotkey(s)

In the target application(s) we’ll be capturing, you’ll need to identify one “hotkey” that can be used to initiate the capture process. This is typically an F2 – F12 function key, but can also be key combinations like ALT + N, SHIFT + F8, etc. This key (or key combination) must be something not used by the target program. For example, if the target program uses all of F1 – F12 keys for its internal purposes, we can’t use one of those as a DynaCash hotkey – it would cause conflicts. For this reason, part of our research is to find out what available keys (or key combinations) are not used by any of the target applications. For casinos where 2 or more target apps are present, this will be a subset of keys that none of the

apps use. We will only need 3 or 4 different keys for DynaCash (as the cashier or slot attendant will use it), and for the screen capture setup process, we only need one. In many cases, if uncertain about what is or isn’t being used by the app, you can use the “~” (tilde) key to do the captures, since it is unlikely to be used by most programs.

**To Set the Hotkey**, click in an entry box, then press the hotkey (or key combination) you have chosen to use. The new choice will show in the entry box.

Click the Close button to return to the DynaSetup “main” window.



# Category Assignment

Click “Categories” on the drop-down menu in the DynaSetup “configuration” window. The following window will show:

This option is geared specifically to the casino environment. It allows dispenses and deposits to be tracked by transaction type. Teller & Activity Reports give a printout with dispenses broken down by categories.

**Categories must be set up in DynaSetup as well as being profiled into the CC-5000.**

**Setting Up Categories** - Open DynaSetup from the Start Menu and choose the “Categories” tab. Enter the category names. If categories are being used with Deposits (bill recyclers), check “Enable Categories for Deposits”.



After categories have been entered in DynaSetup, start the Profiling mode as detailed in the System Tab section of this document. Choose the “Categories” tab and click “Import From DynaSetup”. If categories are being used with Deposits (recyclers), check “Enable Categories for Deposits”. Verify that all Profiling Options in the other tabs are correct and upload the profile to the CC-5000.

**Using Categories** – If dispensing is started with the Specifics or Manual hotkey, it can be assigned to a category. Categories are defined at setup time.

User Reports and the Activity Report show totals for dispenses processed with the Specifics window broken down by category.

If categories are defined in Setup, a category must be chosen to proceed with any dispense that uses the Specifics window.

Up to 9 categories can be defined.

Categories can be selected with the Number 1 – 9 “Speed-key” associated with it in addition to the traditional method of selecting with arrow keys or by clicking on it.

Once a category is chosen, pressing the Space Bar or Enter key may directly dispense the amount, or it may be nominated the same way that any Specifics dispense may be.

Dispenses using the Mixed hotkey are not categorized. If all dispenses are to be categorized, then only a Specifics hotkey would be set up at installation time.

# Bank Assignment

Click “Banks” on the drop-down menu in the DynaSetup “configuration” window. The following window will show:

DynaCash can be set up using the Banks feature to dispense up to 9 pre-determined mixes of bills without having to manually specify the mix. In DynaCash Setup, the Banks feature is turned on and the Bank names and mixes of bills are specified. The Manual Hotkey is used to call up the Banks screen. One thing to be aware of is that when using the Banks feature, the Manual Hotkey feature is not available.

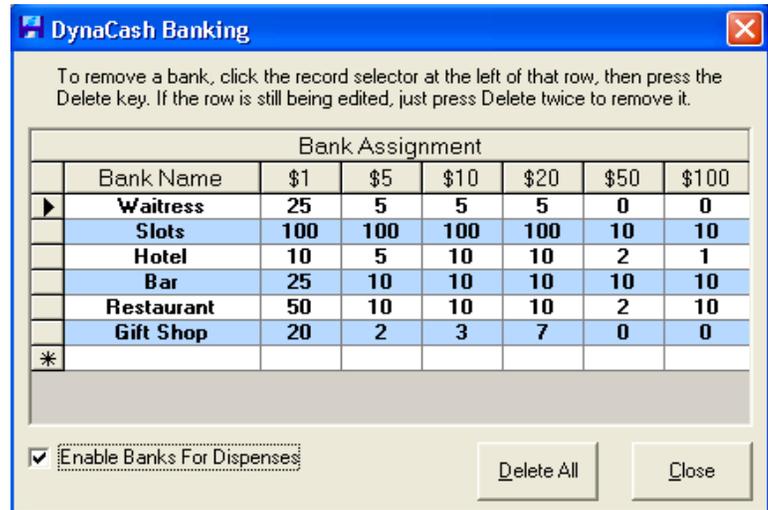
Clicking on the “Banks” selection in the configuration window brings up the following screen.

To activate Banks, click the “Enable Banks for Dispenses” check box.

Type in a Bank Name and enter the bill mix to be dispensed when that Bank is selected. The bill mix is entered as a piece count.

Follow the instructions on the screen to delete any rows. The “Delete All” button can be used to clear the screen completely.

After all Banks have been entered, close the screen. The settings are saved automatically.



# Duress

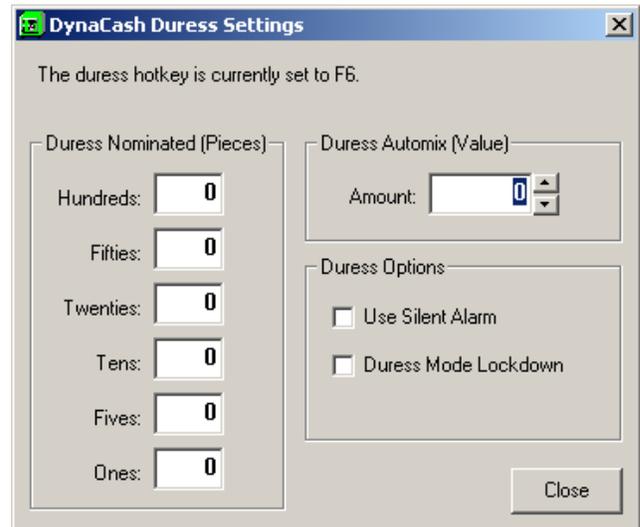
Click “Duress” on the drop-down menu in the DynaSetup “configuration” window. The following window will show:

The Duress option will only be available if a Duress Hotkey is selected in the Hotkey menu. Duress can be set for a specific Nominated amount or a value to be Automixed.

**Duress Nominated:** Enter a Quantity of bills into the respective Denomination of the Duress Nominated field to have the Duress Hotkey dispense the specified bill mix.

**Duress Automix:** To have Duress dispense an Automixed set of bills, enter a value in the Duress Automix section.

**Note:** If an amount is in the Duress Automix section it will override the Duress Nominated.

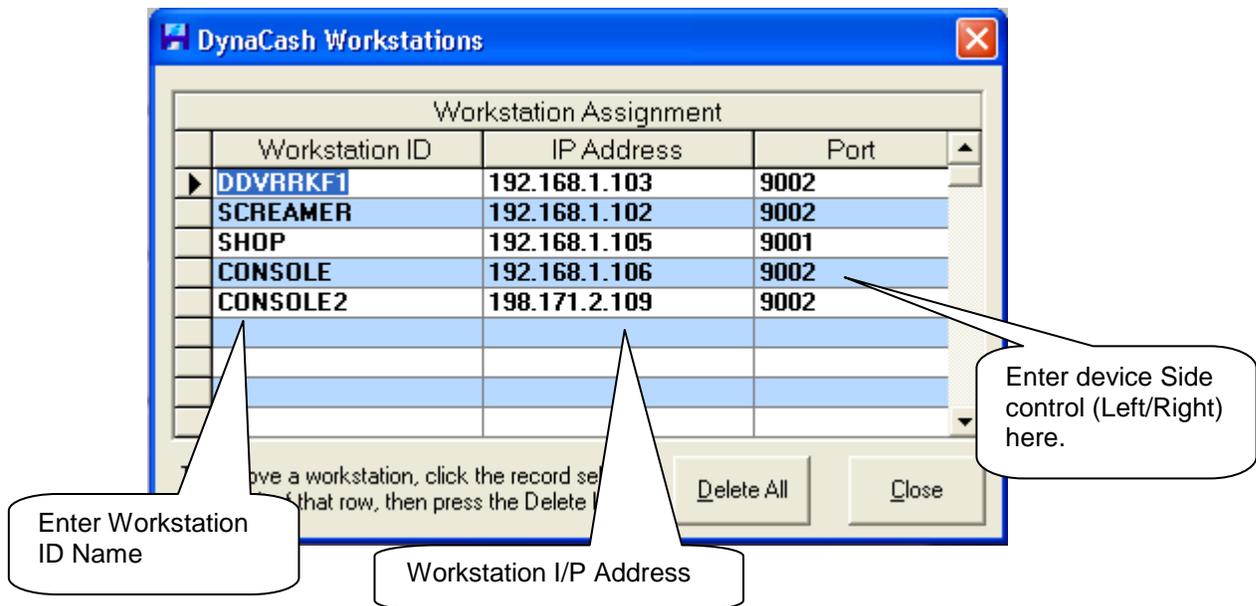


**Use Silent Alarm:** Select this to activate the Silent Alarm on the machine when the Duress Hotkey is pressed. (Only available on certain machines)

**Duress Mode Lockdown:** Select this to have the CC-5000 prevent any other withdrawals from occurring after the Duress Hotkey is pressed.

# Workstation Assignment

1. Click “Workstations” on the drop-down menu in the DynaSetup “configuration” window. The window below will show: This feature permits the user to define workstation entries by Workstation ID, and to assign the IP Address, and Port for Left Side/Right Side control. Up to 99 entries allowed.
2. Enter the Workstation ID name, Manager PC IP Address, and Port / User Side for use whenever that Workstation launches DynaCash.
3. Follow the screen instructions to delete any rows. The “Delete All” button can be used to clear all entries.
4. After all Workstations have been entered, “Close” the window and the settings will be saved automatically.



# Diagnostics

## HotKeys

1. Click on “HotKeys” on the drop Diagnostics menu. If “HotKeys” is checked, you can test the assigned key against any capture screen to verify they work as needed.



## Diagnostics

Setting diagnostics will provide information on the workings of DynaCash. There are four forms of diagnostic that are provided. All diagnostic files can be located in the Diagnostic folder in the main DynaCash folder.

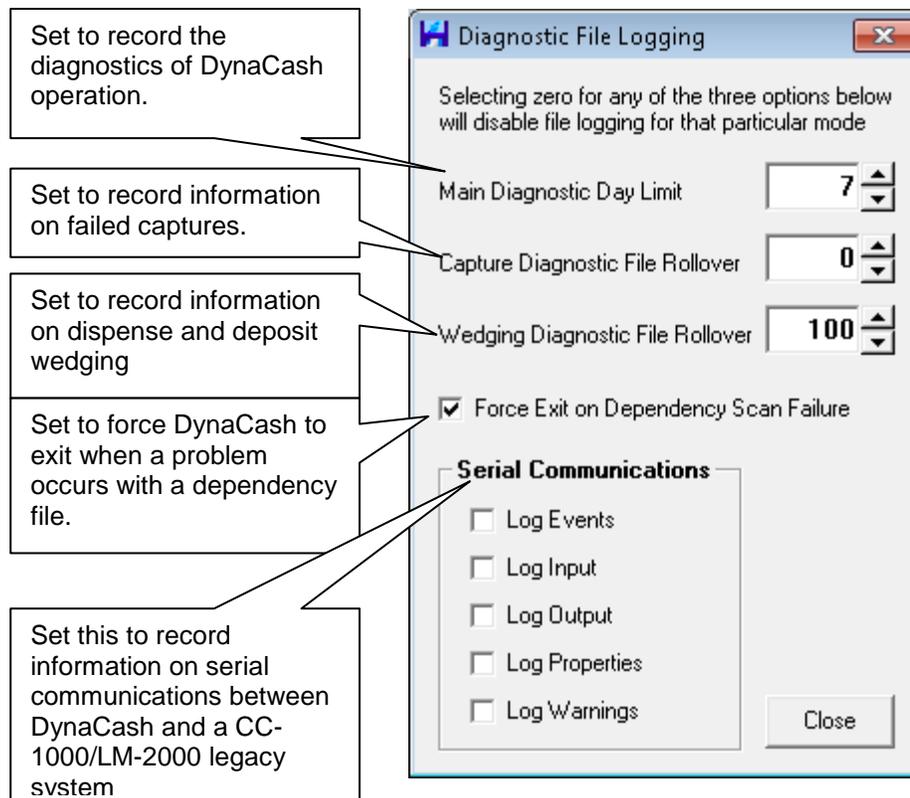
**Main Diagnostic** – When the day limit is set to anything other than zero, this will provide information on the dependency files used by DynaCash and any failure that may occur.

**Capture Diagnostic** – When the file rollover limit is set to anything other than zero, this will provide information on any failed capture attempt.

**Wedging Diagnostic** – When the file rollover limit is set to anything other than zero, this will provide information on totals that have been wedged into dispense or deposit screens.

**Serial Communications** – Checking these boxes will provide the corresponding information for CC-1000/LM-2000 Legacy System communications.

The “**Force Exit on Dependency Scan Failure**” check box, when checked, will close DynaCash in the event of a missing or corrupted dependency file. If the Main Diagnostic is turned on, the information on the failed dependency file will be located in that diagnostic file.



## Selecting Denominations to Use

This stack of check boxes defines which denominations will be in use by the dispenser/recycler device.

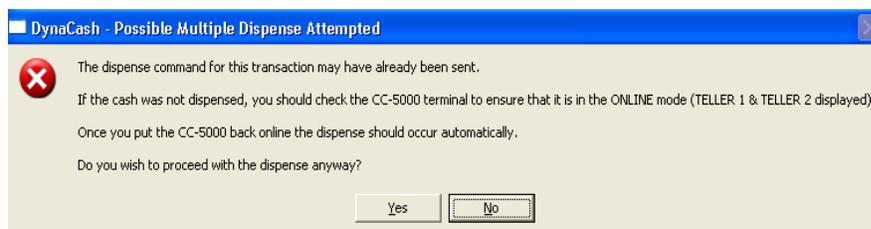
### Settings to Prevent Duplicate Disperses

(Default = checked) Allow Teller Override; Permits Teller to continue a second dispense from the same transaction screen that DynaCash had previously dispensed.



**Duplicate Disperses**  
 Allow Teller Override  
 Allow Tran # Override  
Delay (Secs) 45

**NOTE:** DynaCash will flag a dispense as a “possible duplicate” if the same amount and same amount trigger are found within the delay period also defined in the duplicate dispenses section. A teller is required to wait the delay period if Allow Teller Override is unchecked, otherwise a teller will get a Yes/No option to continue with dispense.



DynaCash - Possible Multiple Dispense Attempted  
The dispense command for this transaction may have already been sent.  
If the cash was not dispensed, you should check the CC-5000 terminal to ensure that it is in the ONLINE mode (TELLER 1 & TELLER 2 displayed).  
Once you put the CC-5000 back online the dispense should occur automatically.  
Do you wish to proceed with the dispense anyway?  
Yes No

Default time delay in seconds is 45.

(Default = unchecked) Allow Transaction # override. If using transaction #'s in the text capture setups, checking this box permits a teller override to re-dispense for a transaction DynaCash has already dispensed from.



**Duplicate Disperses**  
 Allow Teller Override  
 Allow Tran # Override  
Delay (Secs) 45

## Setting App Priority

(Default = Normal). Can be changed to give a higher processing priority to DynaCash application on the host PC. Sometimes necessary on older slower processing PC's or where a teller application does not allow DynaCash windows to pop to the front.

**NOTE:** Please use settings other than “Normal” only when absolutely necessary.

## Setting User Name as Teller or Cashier

(Default = Teller). Can be changed to be “Cashier” if being installed in non-banking Casino type environment where the users are not referred to as Tellers.

## Various Runtime Options for Special Cases

### Dual Capture (Available with T-Rex and Textract Only)

(Default = unchecked). Performs the screen capture twice, to verify and ensure the correct screen has been captured, without changes. This may be required in situations where the teller app transaction window is dynamically updating while the teller presses the DynaCash HotKey.

### Use Absolute Values

(Default = unchecked). Will dispense the exact value in the targeted dispense area, even if it is a negative amount. Normally negative amounts will not be dispensed. Negative amounts may be preceded by a “minus” sign or they may be in parenthesis.

## **Decimal Implied**

(Default = unchecked). Enable only if the Teller App does not display a decimal point between dollars and cents as part of the amount to be dispensed. Example: An entry of \$5000 is really intended to be \$50.00. DynaCash can assume decimal when required.

## **Warn on Bad Capture**

(Default = checked). Check if you want a warning message to appear when a HotKey is pressed and the capture wasn't successful. This can be useful when setting up new captures and installations.

## **Continue on Zero Amount**

(Default = unchecked). This allows DynaCash to continue searching for a dispensable amount once DynaCash encounters a teller app amount that is 'zero'. This is required in rare circumstances where an app has two dispensable amounts where one or the other would be zero.

## **Refresh Teller Window**

(Default = unchecked). Would be required whenever a Teller App does not repaint the transaction window after the DynaCash HotKey has been pressed.

## **Use Metrics**

(Default = unchecked). Windows XP Themes vs. Windows Classic Themes changes the vertical sizing of a Window Title Bar. Enabling Use Metrics helps DynaCash maintain proper window coordinate measurements. Use this option when sharing a DynaCash database between Teller PC's that use a different theme from the PC where the capture originated.

## **Back Fill Off Capture Win**

(Default = unchecked). In some applications a window onto which a dispense backfill is directed may not be the same window from which the dispense capture was hot-keyed. This entry causes DynaCash to hold the Back-Fill values until any other window (other than the capture window) becomes visible. At that time Back-Fill into the new window occurs.

## **Caret Tracking Moves Caret**

(Default=unchecked). When using caret tracking, this option will move the cursor to the proper position that was set in Caret Tracking.

## **Store & End Immediate Wedge**

(Default = checked). Checking this setting allows deposit wedging immediately when the Recycler begins the store on a Store & End command.

## **Use DynaCash Messenger**

(Default = checked). Displays DynaCash system error messages directly on the Teller PC window.

## **Use Messenger for Actions Only**

(Default = unchecked). Used to display only those error messages requiring Teller interaction to resolve.

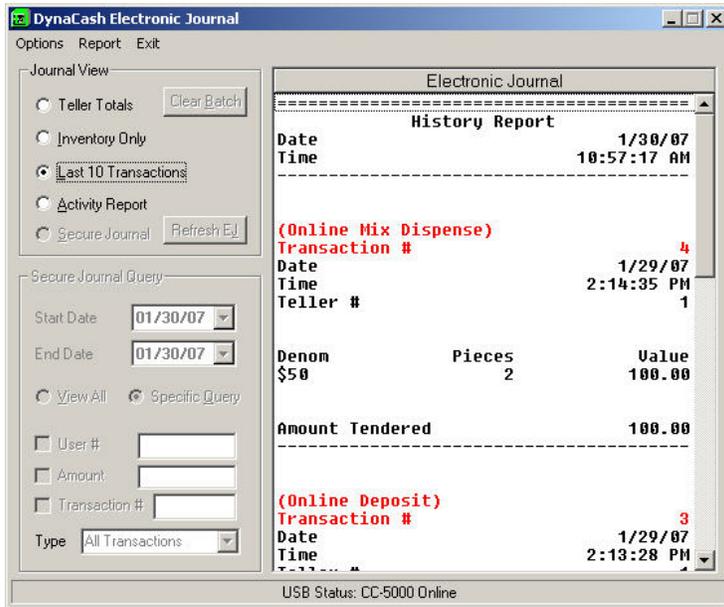
## **Large Font for Dispensing Message**

(Default = unchecked). Used to change the displayed size of the fonts in the Messenger window.

## Electronic Journal View

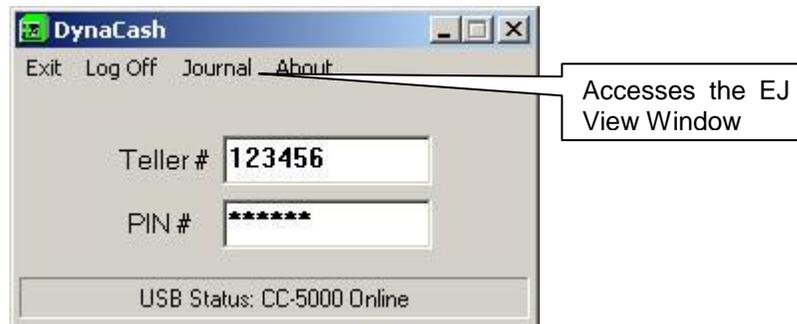
The DynaSetup utility option can also enable the DynaCash Electronic Journal window as the “default” window.

Default To EJ View



When this option is checked [default=checked], the teller logon procedure (either at the CC-5000 while DynaCash is running, or using the DynaCash logon window) will cause the logon window to be hidden and the Electronic Journal window to be shown, though it will be minimized on the Windows Task Bar. This can be more convenient for the teller – they can view the “EJ” with one simple click on the Task Bar.

When **Default to EJ View** in DynaSetup is left unchecked, the teller logon procedure will cause the logon window to be minimized to the Task Bar. Access to the Electronic Journal is accomplished by clicking the **Journal** choice on the logon window’s menu.



## Denoms Ascend

(Default = unchecked). When this is checked, it will show the ones at the top rather than the hundreds.

## Round Up Coin

(Default = unchecked). When checked this will round up any coin total to the nearest dollar value. Example: \$5.01 is converted to \$6.00.

## Use Non-Cash

(Default = unchecked). When checked, this adds a Non-Cash entry to the Specifics window.

# Choosing a Capture Method

## Evaluate the Application

**Identify Deposit Screens** – Identify any screens that have currency entered into.

**Identify screens that show a cash back amount** – Also of primary importance is the identification of which windows in the target program show the cash out amount to be dispensed.

Watch carefully as transactions are being processed. Identify the screens that show a cash back amount that would go to the customer. Watch the transactions from start to finish and notice whether the cash back amount appears on more than one screen as the transaction is processed.

*Notice especially any screens showing the cash back amount that all or most transactions return to which could possibly be used as a common screen to obtain the amount from.* Ideally, all or most transactions return to a common screen that shows the cash back amount. That would be the screen to focus on when attempting to discover a capture engine that retrieves the info from the application.

Be certain to identify all transactions that have a cash back amount. You don't want the customer calling back with screens they are unable to dispense from.

**Look for words that identify the screen** – A screen may have the window caption of "Savings Withdrawal" which can positively identify that screen as one which may have a cash back amount.

**Identify similarities in screens that show a cash back amount** – The commonalities between the screens are often the determining factor for which Capture Engine would work best for the app. We are looking for something that would positively identify the screen as one that contains a cash back amount. If all or most screens preceded the cash back amount with "Cash Back to Customer", for instance, we could use a String Capture method to look for the "Cash Back to Customer" text and dispense the amount that follows.

If each transaction has a different screen but the window caption or field on the page identifies the transaction type, we could use the Positional method to identify the window caption and amount field. In this case, we would do a capture for each different transaction type that had a cash back amount.

If a window pops up that shows the cash back amount and it has a unique window caption such as "Customer Cash Back", we might be able to use Positional method to capture the caption, and the amount field. We might also be able to use a String Capture method to capture the text and the amount. In this case either method would work equally well.

A secondary consideration is whether those same "cash out" windows also have a unique (changing at every transaction) sequence, transaction, or ID number.

Another thing to look for is whether those cash out windows ever get shown in a mode where (non-zero) cash out amount is visible (or could be entered) yet no cash should be allowed to be dispensed at that time. For instance, if the app has a "browse past transactions" view of those windows, where the user could bring up a normally dispensable window (that already had dispensed) and DynaCash needs to prevent a duplicate dispense. We would want captures of these possibilities too, since the window(s) may show additional text in those modes that could identify them as "no dispense". Another example of this is a check cashing window that shows cash out amount, but then later shows a qualifying phrase, such as "transaction accepted" or "transaction denied" upon validation from a server. Having captures of these qualifiers (if any) is that much more added security DynaCash can rely on. We wouldn't allow a dispense if DynaCash finds "transaction denied" text on the screen.

## Capture Engine Overview

The Capture Engines can be broken down into three main methods as follows:

### Positional Methods – Positional and Coordinate

**Positional mode** uses the numeric positions that are returned by the Windows operating system to identify the fields in an application. In many apps the numeric positions of the fields stay fixed and can be used to distinguish a field that identifies the current active window, or a field that has the amount to be dispensed.

Positional Mode is often a good starting point when trying to determine what Capture Engine to use for a customer's application. It is also the default Capture Engine that is set when Generic DynaCash is installed. Positional and Coordinate modes are built into DynaCash and don't require any additional support program to be installed.

Positional mode has the advantage of being completely portable from computer to computer. This means that the initial capture database (.mdb file) and configuration file (.ini file) can be copied from the first computer to any number of subsequent installations.

**Coordinate mode** adds methods to determine a physical position on the screen where the field is located. Coordinate mode is specifically aimed at applications that have positions returned by the Windows operating system that change under certain circumstances. As long as the physical position on the screen is not changing, Coordinate mode still reads from the correct field.

Coordinate mode has the disadvantage of not always being portable from computer to computer. This can require that setup be performed on each computer at installation time. This is usually not a big issue unless it is a large customer with many locations.

### String Capture Methods – T-Rex, Textract, & DynaText

The String Capture method uses various methods to examine the application window and return a "String" of text. Out of that text we can scan for triggers that indicate a cash out/deposit amount. We use the DynaSetup utility to mark the trigger words and amounts that will be needed by DynaCash. The String Capture methods are portable from computer to computer. String Capture is the first resource to try if any of these circumstances exist:

- The customer's app is DOS, running in a window under Windows XP (DOS windows running under Windows 2000 would use T-Rex).
- The customer's app is running in a terminal emulation window (no GUI objects in the app itself, just a DOS-looking main window that may have a terminal emulator toolbar and status panel at the bottom).
- The customer's app is GUI, but the trial text captures done in Positional mode didn't retrieve the text needed for dispense triggers and/or the dispense value itself. This failure can be due to the required text being contained in a list box (rather than a single line entry box) or because the app uses certain objects to contain the text which require much more complex capture techniques than our native Positional mode.
- The customer's app has a "floating" dispense trigger phrase and value. For instance, in the Symitar teller app the phrase "Cash disbursed:" with the dispensable amount following it moves up or down in a list box. There is no steady position for it. To complicate matters, the list itself can be resized in height and widened by the teller. A String Capture technique like T-Rex or DynaText is the only capture methods we can use in this scenario.

**T-Rex String Capture** is built into DynaCash and doesn't require any additional support files to be installed. This is the first choice when using a String Capture method.

**Textextract OCR String Capture** is generally the last choice due to the fact that it is expensive, and there can be registration issues that the manufacturer doesn't address on a timely basis. Sometimes, though, it is the method that works best and it is necessary to use it.

**DynaText String Capture** is built into DynaCash and doesn't require any additional support files to be installed. This is the second choice when using a String Capture method

## Graphical Method – TextStrip

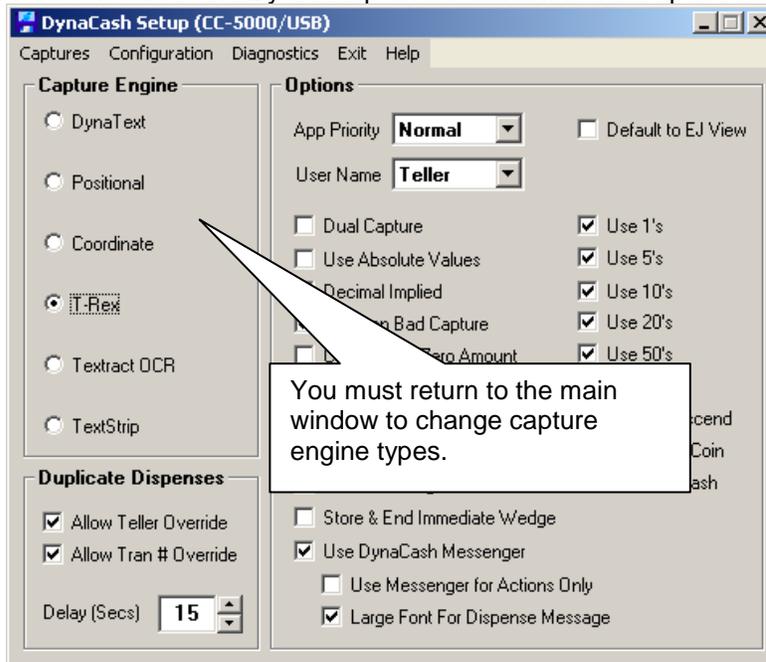
**TextStrip** is set up using images from the app. A font set is built that is an exact graphical match of the font in use by the application in the amount fields. A graphical or positional trigger is used to identify the screen. TextStrip is not always portable from computer to computer.

## Changing the Capture Engine

*Please note that the Capture engine selection will be grayed out if any captures have been added for that Capture Engine. If it is necessary to change capture engine, click on "Captures" in the DynaSetup main window to bring up the DynaCash Captures window. Click on "Captures" in the DynaCash Captures window and select "Delete All Captures" All captures must be cleared before DynaSetup will allow the capture engine to be changed.*

*Only one type of capture engine can be selected for any given installation. It is necessary that you find a single method that works for all Cash Out/Deposit screens.*

At the left side of the DynaSetup "main" window is the Capture engine selection.



# Positional Capture Methods

## Positional Mode

Positional Mode is the default Capture Engine that is set when Generic DynaCash is installed. It is usually the first choice IF the teller app is GUI-based. GUI meaning that the app uses standard Windows buttons, toolbars, text entry boxes, list boxes, and drop-down "combo" boxes. It has the

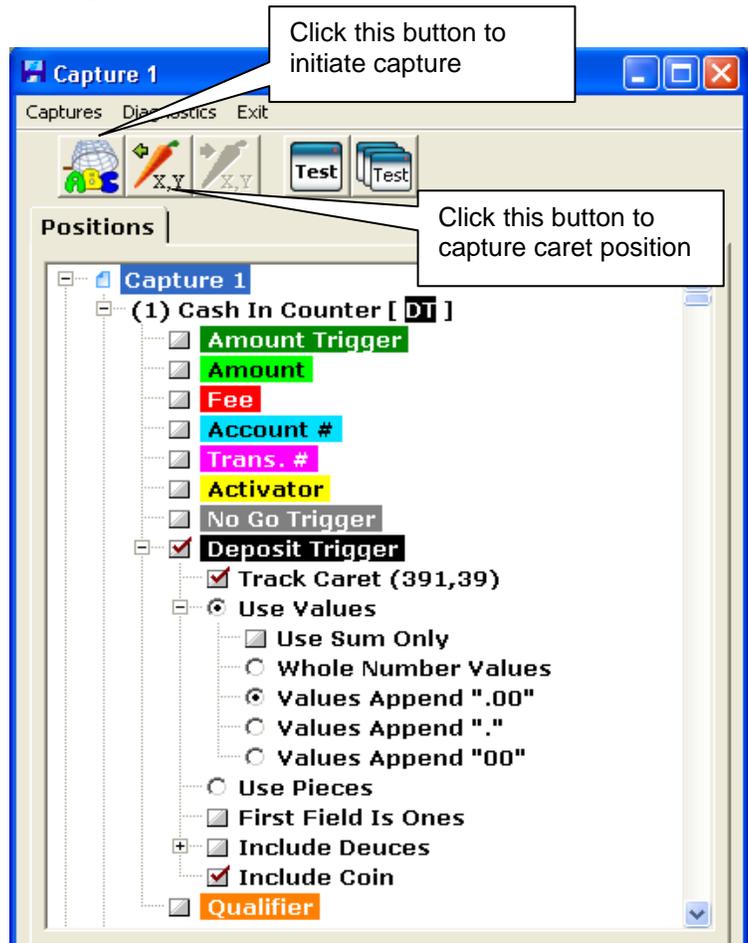
unique capability to capture text from inactive teller app windows or windows that are hidden by an overlying window (such as a printer slip insertion prompt). It uses the numeric positions that are returned by the Windows operating system to identify the fields in an application. In many apps the numeric positions of the fields stay fixed and can be used to distinguish a field that identifies the current active window, or a field that has the amount to be dispensed.

To dispense, we need, as a minimum, to match an Amount Trigger in the proper position, and a non-zero amount in the Amount position. We can also set up Qualifier or No-Go triggers to further verify that we are in the proper window to dispense. A Fee position can be set which will reduce the dispensed amount by the amount in that field.

## Capturing Screens in Positional Mode

1. **Start DynaSetup** from the Windows Start Menu > All Programs > DynaCash > DynaSetup.
2. **Select the Positional Capture Engine** (see “Changing the Capture Engine”) in the DynaSetup “main” window. Remember to delete all captures before attempting to switch capture engines. The selections for choosing a capture engine will be grayed out if all old captures have not been deleted.
3. **Click “Captures”** at the top of the DynaSetup main window. The following window will show. A small secondary window also appears inside the main window. The secondary window has the active capture number in the title bar and tells what the Capture hotkey is set to. It also has 2 “Text Buttons”. The top Text Button is pressed to enter Capture mode. The bottom Text Button is used in Deposit screens to capture the position of the entry caret.
4. **Press the Capture Text Button** in the small secondary window. This will cause DynaSetup to minimize and enable the Capture Hotkey. You are ready for Capture #1.

If it is necessary to bring the captures screen back, click on it on the taskbar. You’ll then need to click the Text Button again to minimize the screen and enable the capture hotkey.



- 5. Open to a Deposit or Cash Out screen on the target app.** Have somebody who is familiar with the app fill in the fields *exactly* as they would for a real transaction.

Be certain that a non-zero cash out amount is present if it is a Cash Out window.

If it is a Deposit window, be sure that the cursor is in position to make the first amount entry.

If a transaction number (trans. #) is being used to prevent multiple dispenses, have a number entered for that.

If there are any other entry boxes in the window, fill them in with appropriate entries.

- 6. Make the entry for the cash out amount a unique number.** This will make it much easier to identify the field in the list of captures. If the cash out amount appears on the screen in multiple places, it is important to determine which field will always have the correct amount to be given back to the customer.

The correct cash back amount may be displayed in more than one field if it is a simple transaction, but then some of the fields may change if, for example, they are cashing more than 1 check, or are doing a split transaction. It is important to talk with someone who is very familiar with the app to determine that the field that will always display the correct cash back amount, no matter how the transaction is processed, is chosen. Try to edit the cash back field to make it a unique number on the screen. Alternatively, if the cash back field cannot be modified, try to edit the other fields.

- 7. Make sure the target app window is active** (has system focus) by using the mouse and clicking on the teller app window. If a smaller window inside the application is the window that contains the needed info, make sure to click on that window.

- 8. Press the Capture hotkey** (F8 in above example).

- 9. Check the results.** The Captures window in DynaSetup should pop back up with the results of what was captured (see example above of a sample capture). Check the list of positions for the dollar value of the cash back amount. Also check the list of positions to see if something that can be used as an Amount Trigger was returned.

Any Windows app should at least return position 1 with the window caption. If no positions are listed under the Capture Number, then the application window was probably not active. Try to capture the screen again but be certain that the window is active as described in step 7. If you do not see any worthwhile text results, it may be necessary to try a different text capture "engine".

- 10. Add additional captures if necessary.** If there are more target app windows to capture, click "Captures" on this window menu, then click "Add Capture". An empty Capture 2 will appear in the capture "tree" (see example above). Click the "Text Button" in the small window to ready DynaSetup for the next capture.

## Add / Delete / Export / Annotate Captures

Choosing “Captures” in the DynaCash Captures window drops down the menu pictured below.

**Add Capture – To** Add a new screen shot Capture

**Delete Current Capture –** Deletes the currently highlighted capture

**Delete All Captures –** Deletes all captures

**Export Capture –** A text file is created and saved in an “Exports” folder in the folder that DynaCash is installed in (default location is C:\Program Files\DynaCash\Exports). If the Diagnostics option “Save Capture Image” is checked, a screenshot of the application is also stored.

**Annotate –** It is possible to save a note along with the capture. Selecting “Annotate” brings up a text box window where a note can be written. To read the note later, choose the capture and select “Annotate” again.



## Positional Mode Diagnostics Menu

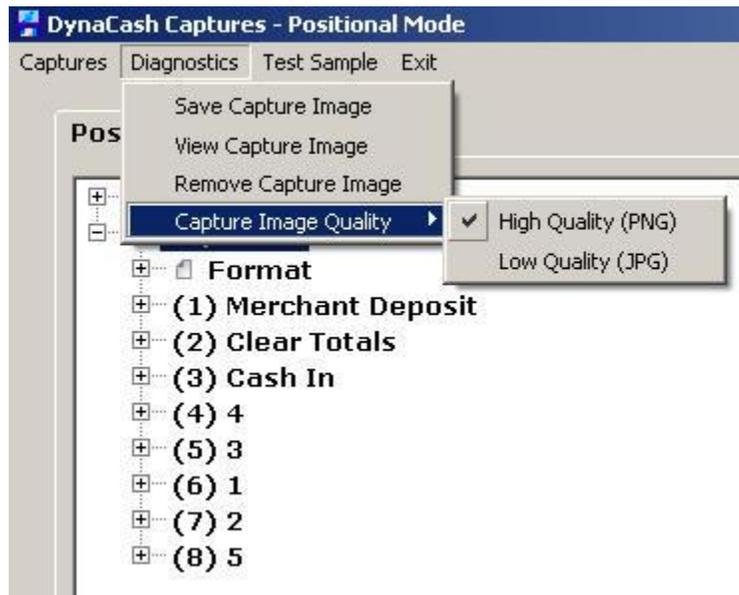
Choosing “Diagnostics” in the DynaCash Captures window drops down the menu pictured below.

**Save Capture Image -** When chosen, a screenshot of the application is saved when the capture is made. This screenshot can be very handy for reviewing elements that were on the screen at capture time and how those elements were actually captured by DynaSetup. The “Export Capture” option under the “Captures” menu can be used to save the image to a file (see previous section above).

**View Capture Image -** When checked, the saved screenshot of the application displays instead of the capture data. Uncheck it to return to the capture data view.

**Remove Capture Image –** If selected, the saved screenshot of the application is deleted. View Capture Image has to be unchecked first.

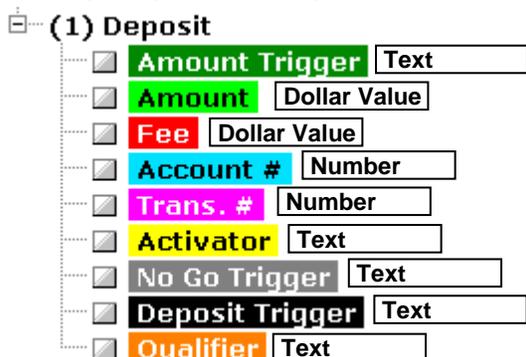
**Capture Image Quality –** High Quality is the default setting. Leave at the High Quality setting unless there is an absolute need to reduce file sizes. The High Quality image can be useful for testing purposes.



## Positional Screen Marking Tools

The illustration below shows a typical capture field that has been expanded and shows the available Trigger types.

The Triggers can be divided into 3 basic types according to what kind of data is expected to be in the field; Text, Dollar Value, and Number. The types for each are shown below.



**Amount Trigger** – (Position containing Text) The Amount Trigger in Positional mode is a field that is returned by the DynaCash software as a position that contains text that can positively identify the screen. Keep in mind that you can't always find an Amount Trigger that absolutely identifies that screen. You may also need to use a Qualifier which looks for other text to be present, or a No Go Trigger which kills that dispense if that text is present. If the Amount Trigger is found when the hotkey is pressed, then DynaCash will continue to look for an amount (unless a Qualifier is not present or a No Go is found).

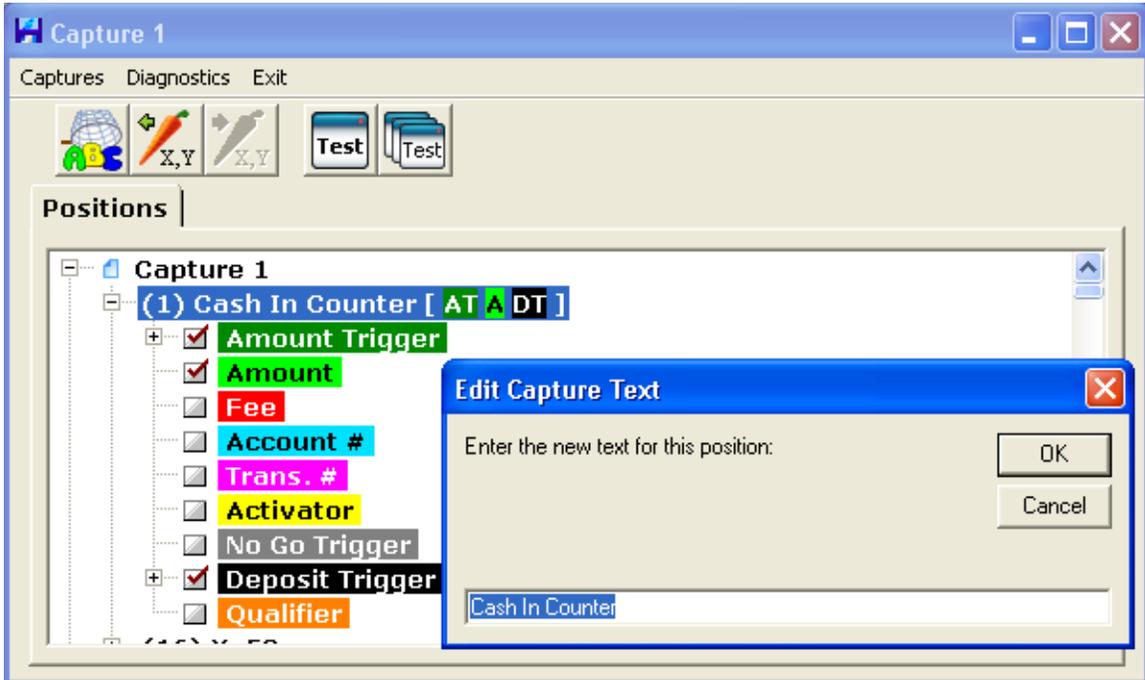
An important point to remember is that at run time as long as the position CONTAINS the text that is shown in this position, and then it is considered a valid match. This can sometimes give unexpected results. For example, a trigger "Cash" would give a positive match for a field that said "Cashed Check". This could be a problem because we are in the wrong screen. If there was an incorrect dollar amount in the position marked as Amount, it will dispense that value. Try to make the triggers as unique as possible to avoid this type of problem.

**Amount** – (Position containing a Dollar Value) The position that is marked as the Amount is the position that holds the cash back dollar value that is given back to the customer.

It should be noted that when DynaSetup returns the positions you should examine the list to see if the amount appears in more than one place. If it does appear more than once, it is important to carefully examine the app and talk to the people who are familiar with it to determine if there are ways that the transaction can be done which would cause the fields to have different values in them. Some things that might cause this is if the user is processing multiple checks for a single transaction, if they are doing a split transaction, or if the user backtracks and edits a transaction because a mistake was made or the customer changed their mind about something.

If duplicate amounts are present in the list, consult with the users to determine which amount on the screen will always hold the correct cash out value. Try to make that field a unique number by editing the field itself or manipulating other numbers on the screen. Recapture the screen after the field is changed to a unique value. This will help to determine the correct field to mark. DO NOT try to guess which field is correct by looking at its position in the list. There is often no correlation between the physical position on the screen and the position on the list as captured. If an incorrect field is marked, DynaCash may dispense the correct field during testing, but then mis-dispense later when the transaction is done a different way.

**Shared Amount Trigger & Amount** – (Position containing both Text and a Dollar Value). In certain circumstances, the Amount Trigger and the Amount may be in the same position. It is possible to mark a single position as both the Amount Trigger and the Amount. The picture below illustrates a capture that has them both in Position 6. In this case, both Amount Trigger and Amount is checked. Next, highlight the line of text then right-click on the text that has both the Amount Trigger and Amount to bring up the “Edit Capture Text” window shown below. *Edit out any part of the line that does not stay constant from transaction to transaction.* In this case we edit out the dollar value which changes by transaction and leave the text “Cash Back” as the Amount Trigger.



**Edited Text Trigger** - (Position containing either Text or both Text and a Dollar Value) DynaCash allows the captured text for any of the any of the Text Trigger types (Amount Trigger, Activator, No Go, & Qualifier) to be edited. The example above of a Shared Amount Trigger and Amount is a special case of an Edited Amount Trigger. This same principal can be applied to positions that contain fixed text that would be useful as an Amount Trigger, but also contain text that changes. A real world example would be a window caption that lists the transaction type, but also contains the name or user number of the signed on user (eg. Check Deposit – Teller 132). In this case the “Teller 132” is edited out, leaving the Amount Trigger as “Check Deposit –”. Notice how a space and hyphen were left as part of the text. Keep the text as unique as possible to prevent false matches at other screens in the app.

Again, an important point to remember is that at run time as long as the position CONTAINS the edited text, then it is considered a valid match. Beware of editing it into something too simple that might be contained in text retrieved from other screens at the same position.



**Fee** – (Position containing a Dollar Value) *The Fee field is only used if the application does not display a correct cash out amount anywhere on the screen* because the fee is not subtracted from the displayed amount. If the app displays a cash out amount and displays the fee, then DynaCash can do the math and dispense the correct amount to the customer. If a position is marked as a Fee, DynaCash will automatically subtract the Fee field from the Amount field before the dispense.

**Account #** - (Position containing a number) The Account number field is currently not active. It is there for a future release which would print the Account Number on the journal tape as part of the record of the dispense.

**Trans. #** - (Position containing a number) The Transaction Number field would be a field containing a number that increments every time a transaction is done. This number can be used as a way to prevent multiple dispenses from occurring from the same screen if the hotkey is inadvertently pressed more than once.

Multiple dispenses from the same screen are prevented by setting a minimum time limit (default 45 seconds) before the hotkey will allow another dispense. This is usually sufficient to prevent multiple dispenses so the Trans. # option is not used often. If a Trans. # is marked, it will enable the Prevent Multiples by Trans. # feature only for captures that have a Trans. # checked.

**Activator** - (Position containing Text) The Activator mode is a more automated method of dispensing, requiring no action on the tellers part to remember to initiate the dispense. The installing technician sets DynaCash to use command buttons or edit box entries in the teller app itself to trigger the dispensing. When the teller transaction gets to the point where a final edit box entry is made, or an “accept transaction” type of button is clicked, DynaCash detects that final action and begins the dispense cycle at that time. (see “Activator Mode” section for more details on operating in Activator Mode)

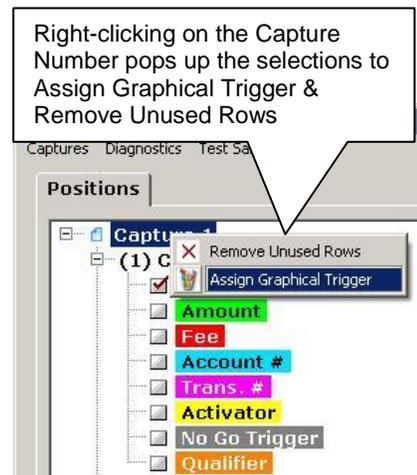
**No Go** – (Position containing Text) No Go Trigger fields are used to prevent dispense if certain text appears on the screen.

**Qualifier** – If a Qualifier is marked, dispense will not occur unless the marked text is present in that position.

**Deposit Trigger** – (Recyclers Only) If checked, this would be for a window with a currency input. Further options for setting up the insertion of totals into the Deposit window will be available under “Format” and under the “Bills” and “Deuces” tabs (only visible for Recyclers).

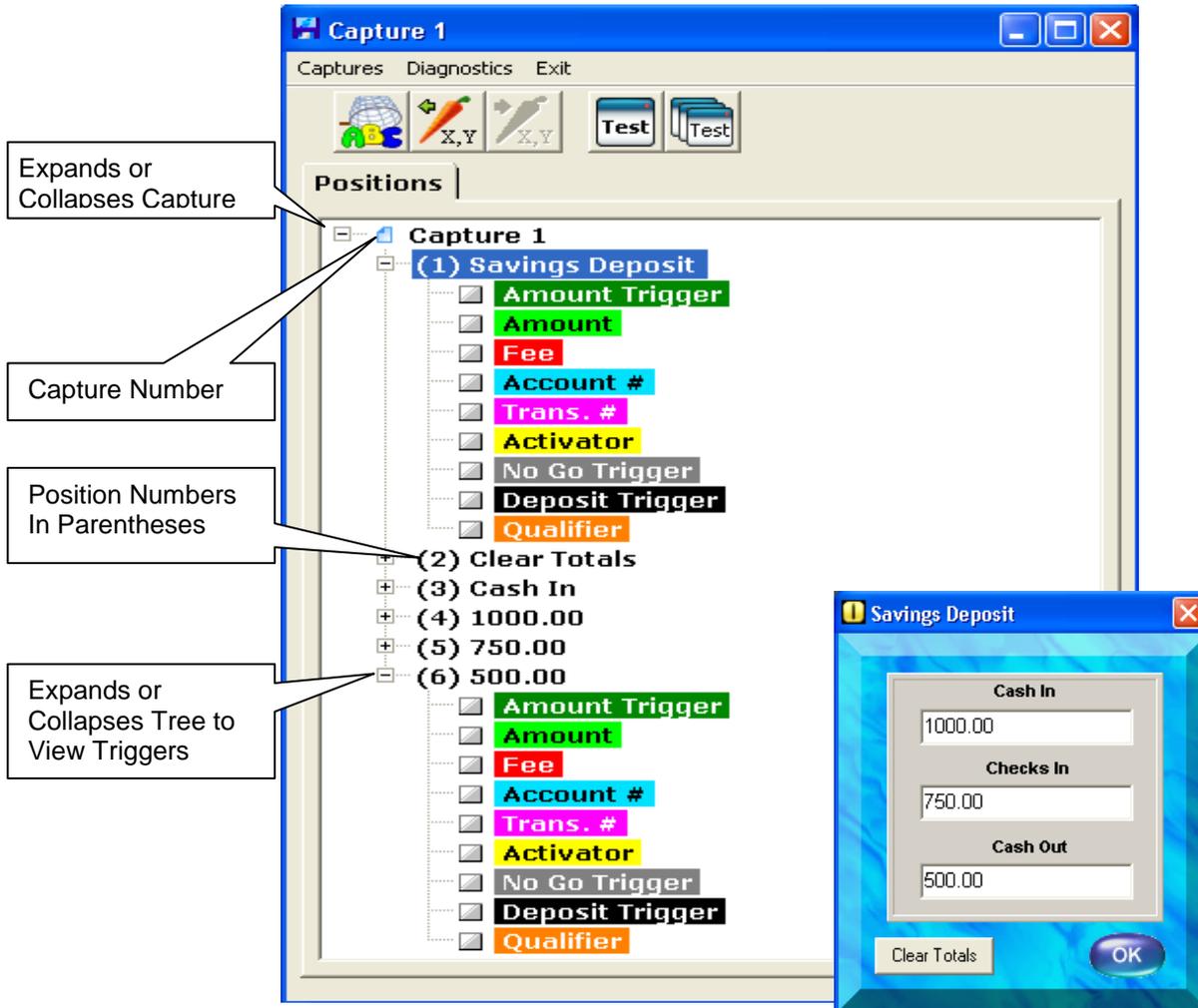
**Assign Graphical Trigger** – Instead of selecting a position as an Amount Trigger, it is possible to select an area of the screen as the Amount Trigger. This is accessed by right clicking on the Capture Number that will be assigned the Graphical Trigger. In this case, the Graphical Trigger and a position marked as an Amount field are all that is necessary to initiate the dispense.

**Remove Unused Rows** – This is also accessed by right-clicking on the Capture Number. When Remove Unused Rows is selected, any positions that don't have a check box marked will be deleted. This cleans things up and makes the list of Captures easier to read and review.



## Marking the Captures

The screen below illustrates a Positional Capture with the Amount Trigger and Amount fields expanded. The inset picture shows the screen that the capture is from. Note that the screen caption (Savings Deposit) is always position 1.



**All Deposit Captures require a Deposit Trigger be selected**

**All Dispensing Captures require at least an Amount Trigger and an Amount be selected**

1. **Select a Capture** – Click on the Capture if it's not already highlighted.
2. **View the Positional Data** – If the capture is not already expanded, click the + next to the capture number to expand the capture and view the positions and data.

Position Numbers are in Parentheses. The data in that position is shown to the right of the position number.

3. **Mark Triggers in Selected Positions** – Clicking the + next to a position drops down the selections for Amount Trigger, Amount, etc. Check the appropriate box next to the selection.
4. **Remove Unused Rows** – Removing the unused rows makes the captures more readable.
5. **Exit to Save** - Once all of the target app screen captures have been marked, exit the capture window, then exit DynaSetup. The captures are automatically saved.

## Coordinate Mode

**Coordinate mode** adds methods to determine a physical position on the screen where the field is located. Coordinate mode is specifically aimed at applications that have positions returned by the Windows operating system that change under certain circumstances. As long as the physical position on the screen is not changing, Coordinate mode still reads from the correct field.

Coordinate mode has the disadvantage of not always being portable from computer to computer. This can require that setup be performed on each computer at installation time. This is usually not a big issue unless it is a large customer with many locations.

**Switch the Capture Engine to Coordinate** in the main DynaCash Setup screen. The DynaSetup capture window will look identical to Positional mode, except it will show Coordinate instead of Positional in the title bar.

All previous captures must be deleted before a different capture engine can be chosen. If not, the selections for Capture Engine will all be grayed out (see "Changing the Capture Engine").

The capture process for Coordinate mode is identical to the process used for Positional mode. The difference between Coordinate mode and Positional mode is that we are using x-y coordinates on the screen to locate fields that contain the needed data instead of positions returned by Windows. This can be useful with some apps because the positional data can change, according to how the screen has been filled in by the user. The disadvantage is that coordinate mode is not as forgiving of changes operators may make to the screen with different Windows Themes. It is also not as portable from computer to computer as the Positional mode for the same reason. We are working on a fix for this issue in an upcoming DynaCash release.

Continue to capture any necessary screens exactly as is described in the Positional mode section.

# String Capture Methods

## T-Rex Mode

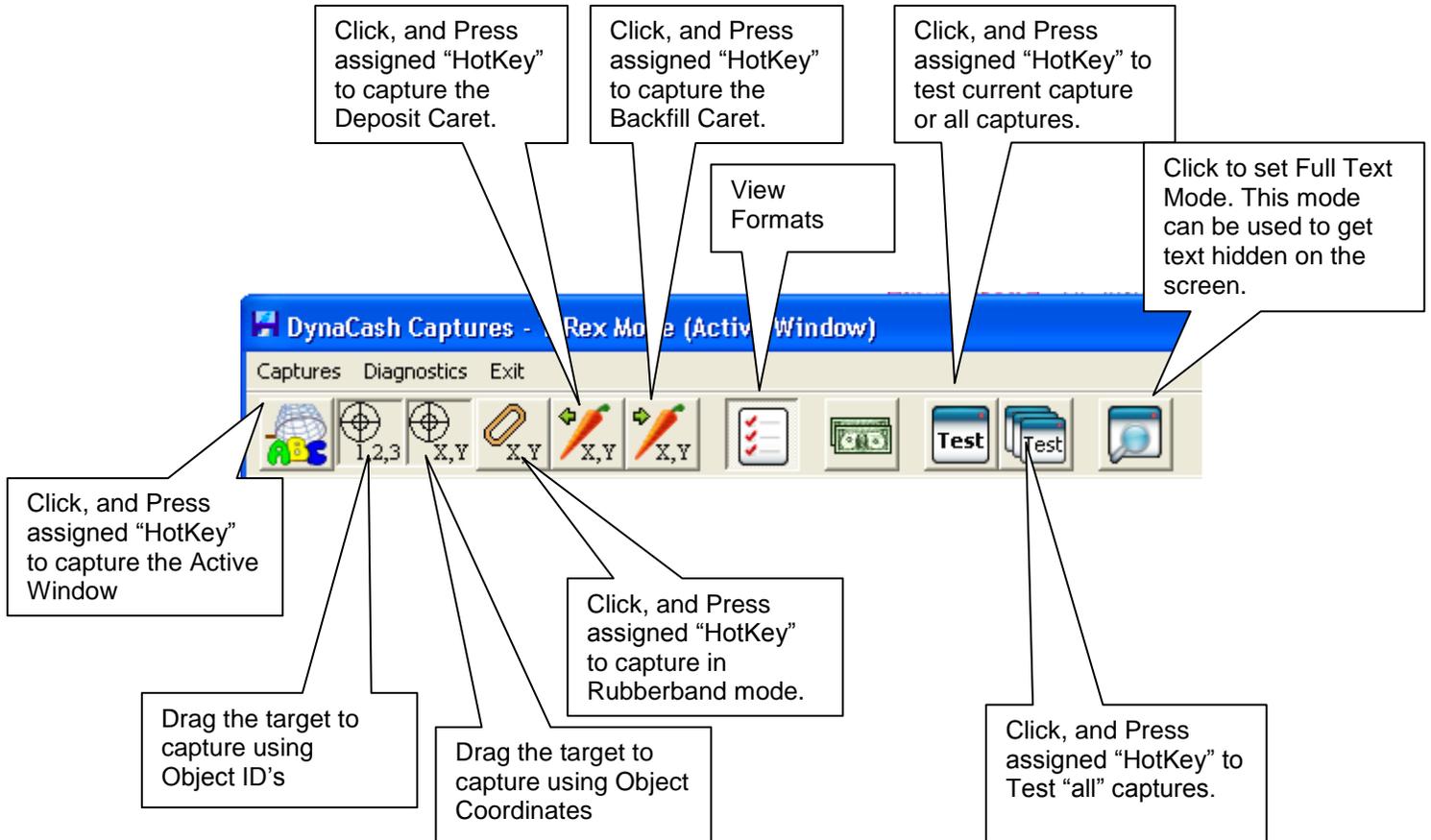
After Positional, T-Rex is the other most frequently used capture technique and is the first resource to try if any of these circumstances exist:

- The customer's app is DOS, running in a window under Windows XP
- The customer's app is running in a terminal emulation window (no GUI objects in the app itself, just a DOS-looking main window that may have a terminal emulator toolbar and status panel at the bottom).
- The customer's app is GUI, but the trial text captures done in Positional mode didn't retrieve the text needed for dispense triggers and/or the dispense value itself. This failure can be due to the required text being contained in a list box (rather than a single line entry box) or because the app uses certain objects to contain the text which require much more complex capture techniques than our native Positional mode.
- The customer's app has a "floating" dispense trigger phrase and value. For instance, in the Symitar teller app the phrase "Cash disbursed:" with the dispensable amount following it moves up or down in a list box. There is no steady position for it. To complicate matters, the list itself can be resized in height and widened by the teller. A String Capture technique like T-Rex or Textract is the only capture methods we can use in this scenario.

**Switch the Capture Engine to T-Rex** in the main DynaCash Setup screen. All previous captures must be deleted before a different capture engine can be chosen. If not, the selections for Capture Engine will all be grayed out (see "Changing the Capture Engine").

**Choose "Captures" in the main DynaCash Setup screen** to bring up the DynaCash Captures – T-Rex Mode screen.

To select a preferred capture method, left-click on the desired menu toolbar button and the DynaCash Captures screen will minimize to the bottom of the window onto the taskbar. By default, you should try using the  "Active Window" button on the toolbar button first.

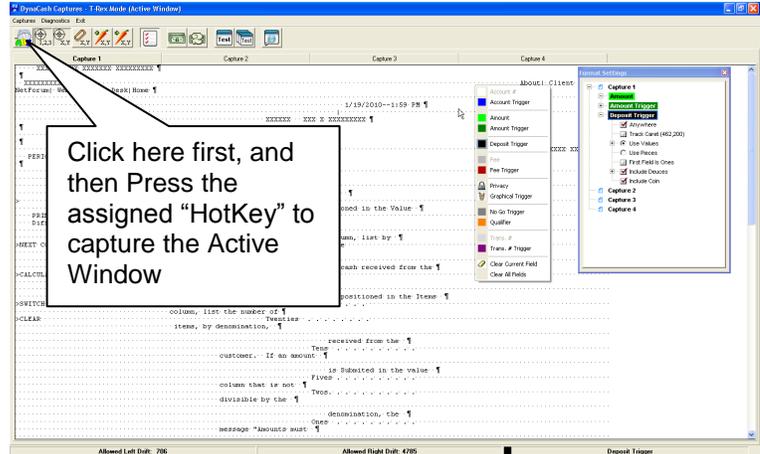


# Capturing Screens in String Capture Mode

1. **Start DynaSetup** from the Windows Start Menu > All Programs > DynaCash > DynaSetup.

2. **Click “Captures”** at the top of the DynaSetup main window. The following window will show the secondary window the active capture number in the title bar, and identifies what the Capture hotkey is set to.

3. **Press the “Capture Active Window Button”** located in the left most position of the toolbar. This will cause DynaSetup to minimize and enable the Capture Hotkey. You are ready for Capture #1.



If it is necessary to bring the captures screen back, click on it on the taskbar. You'll then need to click the desired Text Capture method Button again to minimize the screen to enable the capture hotkey.

4. **Bring up a screen from the target app that has valid Cash Out amount.** Have somebody who is familiar with the app fill in the fields *exactly* as they would for a real transaction.

Be certain valid cash out amount is visible on the display screen.

If a transaction number (trans. #) is being used to prevent multiple dispenses, have a number entered for that.

If there are any other data entry boxes in the window, fill them in with appropriate entries.

5. **Make sure the target app window is active** (has system focus) by using the mouse and clicking on the teller app window. If a smaller window inside the application is the window that contains the needed info, make sure to click on that window.

6. **Press the Capture hotkey** (F8 in above example).

7. **Using Full Text Mode** – This can be used to find hidden text on the screen that may be covered under text boxes or collapsed in the File Edit buttons. This will allow for more options for triggers.

8. **Check the results.** The Captures window in DynaSetup should pop back up with the text that was captured. If this text capture engine isn't well suited for the target app, you may get a **“No Text Retrieved”** message instead of useable text. **Note** - a **“No Text Retrieved”** message is also an indication the application window was probably not active. Try to capture the screen again but be certain that the window is active as described in previous steps. If you do not see any worthwhile text results, it may be necessary to try a different text Capture Engine.

**Note** – for any capture that you just completed, if for some reason you want to recapture it, click the appropriate capture method and capture again answering yes to the overwrite prompt.

9. **Add additional captures if necessary.** If there are more target app windows to capture, click “Captures” on this window menu, then click “Add Capture”. An empty Capture 2 tab will appear. Click the “Text Button” in the small window to ready DynaSetup for the next capture.

## Add / Delete / Export / Annotate Captures

Choosing “Captures” in the DynaCash Captures window drops down the menu pictured below.

**Add Capture** – Adds a new Capture

**Delete Capture** – Deletes the current capture

**Delete All Captures** – Deletes all captures

**Export Capture** – A text file is created and saved in an “Exports” folder in the folder that DynaCash is installed in (default location is C:\Program Files\DynaCash\Exports). If the Diagnostics option “Save Capture Image” is checked, a screenshot of the application is also stored.

**Annotate** – It is possible to save a note along with the capture. Selecting “Annotate” brings up a text box window where a note can be written. To read the note later, choose the capture and select “Annotate” again.



## String Capture Mode Diagnostics Menu

Choosing “Diagnostics” in the DynaCash Captures window drops down the menu pictured below.

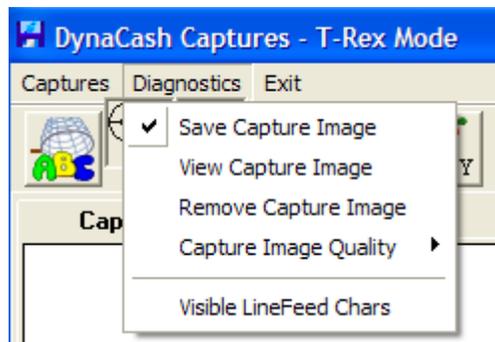
**Save Capture Image** - When chosen, a screenshot of the application is saved when the capture is made. This screenshot is very handy for reviewing elements that were on the screen at capture time and how those elements were actually captured by DynaSetup. The “Export Capture” option under the “Captures” menu can be used to save the image to a file (see section above).

**View Capture Image** - When checked, the saved screenshot of the application displays instead of the capture data. Uncheck it to return to the capture data view.

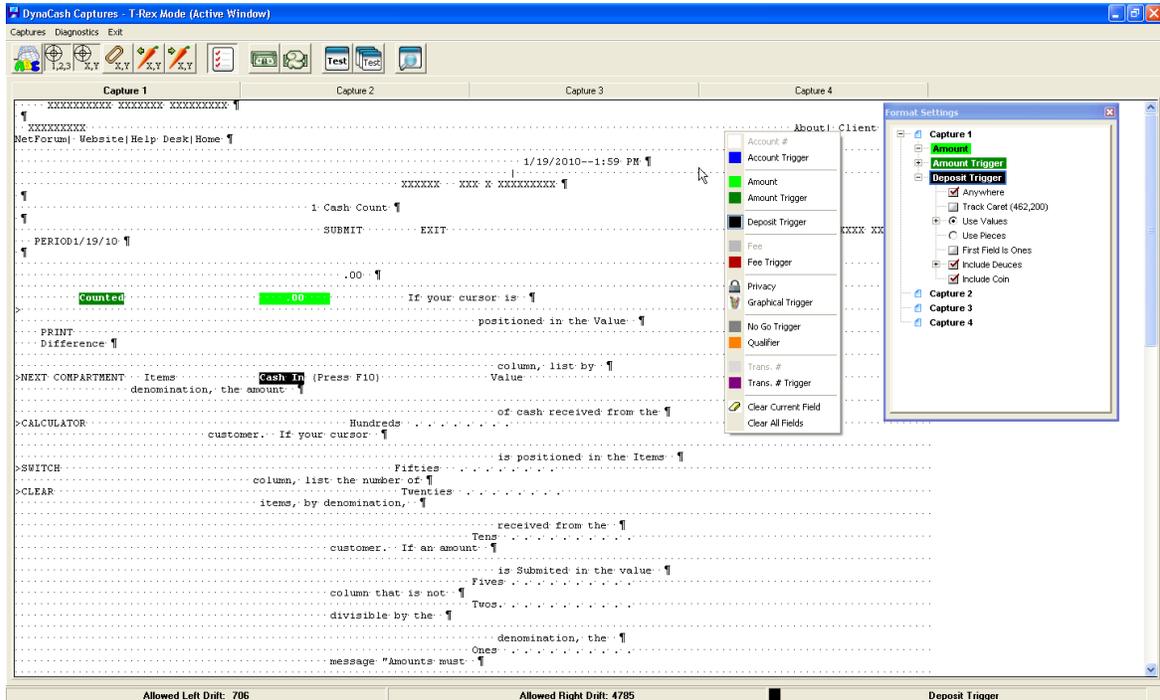
**Remove Capture Image** – If selected, the saved screenshot of the application is deleted. View Capture Image has to be unchecked first.

**Capture Image Quality** – High Quality is the default setting. Leave at the High Quality setting unless there is an absolute need to reduce file sizes. The High Quality images can be useful for testing purposes.

**Visible Linefeed Chars** – When checked, the positions of any Linefeed Chars in the text string are displayed. A period is also displayed for every space.



# Marking Captured Text



- Right clicking the mouse while the cursor is in the text area of DynaSetup will bring up the Trigger and Value selections menu shown above.
- Clicking on one of the selections will minimize the selection window.
- Click and drag your mouse over the appropriate text to select it.
- All dispenses require at least an Amount Trigger and an amount to be selected.

**Amount Trigger** – The Amount Trigger in String Capture mode is used to identify that a cash out amount is after or in front of it. It is best to use an Amount Trigger that is in close proximity to the cash out amount. Keep in mind that you can't always find an Amount Trigger that uniquely identifies that screen. You may also need to use a Qualifier which looks for other text to be present, or a No Go Trigger which kills dispensing if that text is present. If the Amount Trigger is found when the hotkey is pressed, then DynaCash will continue to look for an amount (unless a Qualifier is not present or a No Go is found).

Be careful that the Amount Trigger does not appear more than once in the capture. The first instance that is found will be what the DynaCash software uses to try and locate a cash out amount.

**Amount** – The area marked as the Amount is the area that holds the cash back dollar value that is given back to the customer.

**No Go** – No Go Trigger fields are used to prevent a dispense if certain text appears on the screen.

**Qualifier** – If a Qualifier is marked, the dispense will not occur unless the marked text is present in that position.

**Fee Trigger** – The Amount Trigger in String Capture mode is used to identify that a Fee amount is after or in front of it. It is best to use a Fee Trigger that is in close proximity to the Fee amount.

**Fee** – The Fee field is only used *if the application does not display a correct cash out amount anywhere on the screen* because the fee is not subtracted from the displayed amount. If the app displays a cash out amount and displays the fee, then DynaCash can do the math and dispense the correct amount to the customer. If an area is marked as a Fee, DynaCash will automatically subtract the Fee field from the Amount field before the dispense.

**Account Trigger/Account #** - The Account number fields are currently not active. They are there for a future release which would print the Account Number on the journal tape as part of the record of the dispense.

**Trans. # Trigger** – The Transaction Number Trigger in String Capture mode is used to identify that a Transaction Number is after or in front of it. It is best to use a Transaction Number Trigger that is in close proximity to the Transaction Number.

**Trans. #** - The Transaction Number field would be a field containing a number that increments every time a transaction is done. This number can be used as a way to prevent multiple dispenses from occurring from the same screen if the hotkey is inadvertently pressed more than once.

By default, multiple dispenses from the same screen are prevented by setting a minimum time limit (45 seconds) before the hotkey will initiate another dispense. This is usually sufficient to prevent multiple dispenses so the Trans. # option is not used often. If a Trans. # is marked, it will enable the Prevent Multiples by Trans. # feature only for captures that have a Trans. # checked.

**Graphical Trigger** – It is possible to select an area of the screen as the Amount Trigger. In this case, the Graphical Trigger and an area marked as an Amount field are all that is necessary to initiate the dispense. Selecting Graphical Trigger brings up a drawing hand which is used to draw a box around the Graphical Trigger

**Privacy** – Privacy selection can be used to block out personal data text that is captured.

**Clear Fields** – The Clear Fields option Clears highlighted items so that they can be remarked.

**Formats Window** – The Formats window is viewed by checking the “View

Format Settings”  toolbar button.

Text Triggers have a checkbox to enable the trigger to be anywhere on the screen. Also, this is where the variables for Deposit and Backfill wedging can be set.

**Deposit Trigger (Recyclers Only)** – The Deposit Trigger would be marked to identify a window with a currency input. Further options for setting up the insertion of totals into the Deposit window will be available under “Format” in the “View Format Settings” window, and under the “Bills” selection at the top of the screen (only visible for Recyclers).

## DynaText Mode

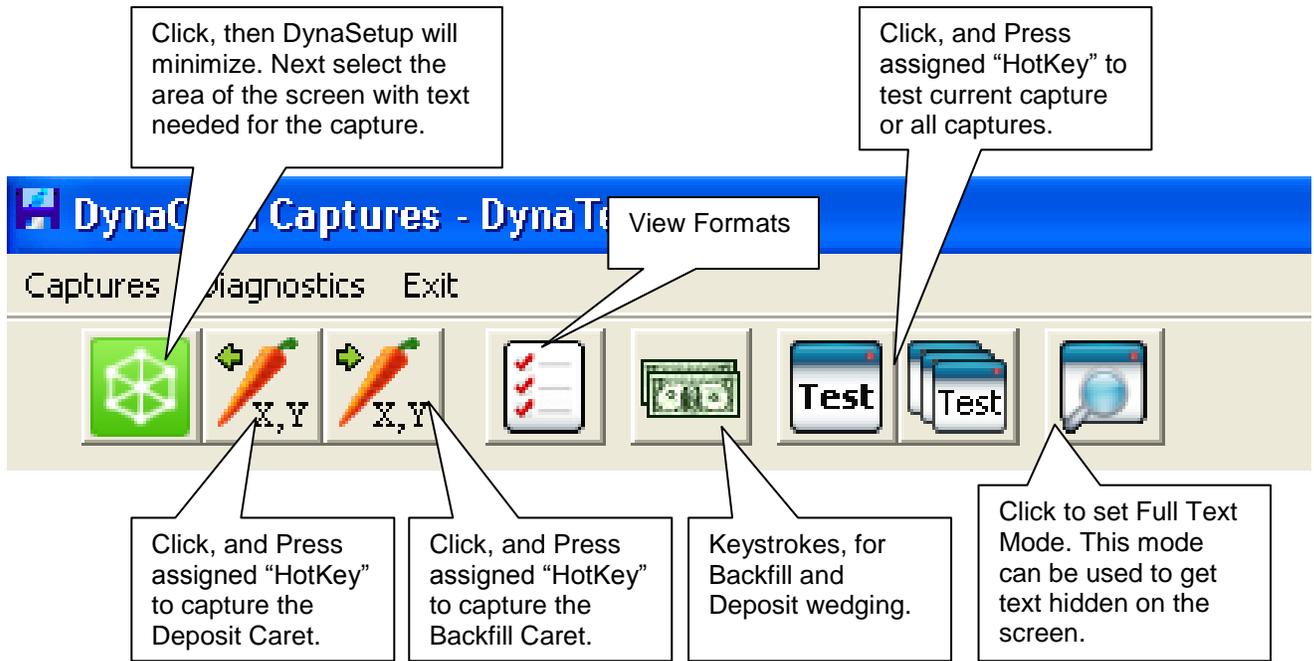
This mode uses a method similar to T-Rex's Object ID mode. The difference is how it gets the text from the certain elements of a program. Try this mode if any of these circumstances exist:

- The customer's app is DOS, running in a window under Windows XP
- The customer's app is running in a terminal emulation window (no GUI objects in the app itself, just a DOS-looking main window that may have a terminal emulator toolbar and status panel at the bottom).
- The customer's app is GUI, but the trial text captures done in Positional mode didn't retrieve the text needed for dispense triggers and/or the dispense value itself. This failure can be due to the required text being contained in a list box (rather than a single line entry box) or because the app uses certain objects to contain the text which require much more complex capture techniques than our native Positional mode.
- The customer's app has a "floating" dispense trigger phrase and value. For instance, in the Symitar teller app the phrase "Cash disbursed:" with the dispensable amount following it moves up or down in a list box. There is no steady position for it. To complicate matters, the list itself can be resized in height and widened by the teller. A String Capture technique like T-Rex or DynaText is the only capture methods we can use in this scenario.

**Switch the Capture Engine to DynaText** in the main DynaCash Setup screen. All previous captures must be deleted before a different capture engine can be chosen. If not, the selections for Capture Engine will all be grayed out (see "Changing the Capture Engine").

**Choose "Captures" in the main DynaCash Setup screen** to bring up the DynaCash Captures – DynaText Mode screen.

**To start a capture**, left-click on the DynaText menu toolbar button and the DynaCash Captures screen will minimize to the bottom of the window onto the taskbar. If any issues arise or not all of the data needed is captured, then try it again with FullText mode enabled. With DynaText it is best to try to get all of the triggers as their own element, i.e. the Amount trigger as its own element, the Amount as its own element, and the Deposit trigger as its own element.



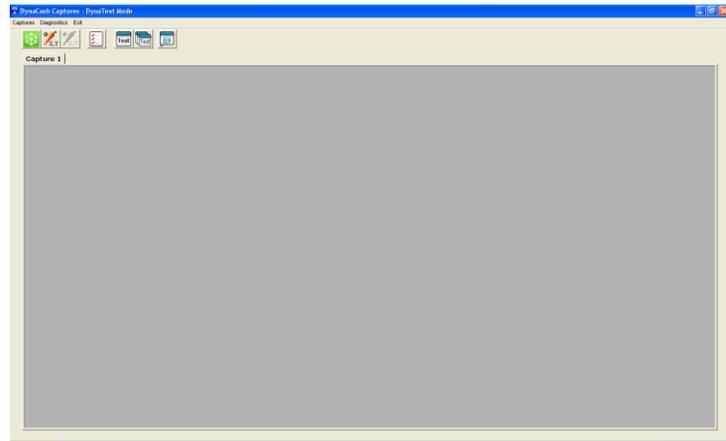
## Capturing Screens in DynaText Mode

1. **Start DynaSetup** from the Windows Start Menu > All Programs > DynaCash > DynaSetup.
2. **Click “Captures”** at the top of the DynaSetup main window. The following window will show.

3. **Bring up a screen from the target app that has valid Cash Out amount.** Have somebody who is familiar with the app fill in the fields *exactly* as they would for a real transaction.

Be certain valid cash out amount is visible on the display screen.

If a transaction number (trans. #) is being used to prevent multiple dispenses, have a number entered for that.



If there are any other data entry boxes in the window, fill them in with appropriate entries.

4. **Press the “Capture DynaText Section Button”** located in the left most position of the toolbar. This will cause DynaSetup to minimize. You are ready for Capture #1.
5. **Left click on the target app when the blue box encompasses the area of the screen with the information needed.** After DynaCash has minimized a blue box will appear over any elements found on the screen. When the box highlights the information needed, left click to grab the information. This will return you to the Capture menu. Always try to ‘drill down’ to only the information needed, i.e. just the amount. DynaText works by using element IDs to signify where to find the information needed for returning the proper text.
6. **Using Full Text Mode** – This can be used to find hidden text on the screen that may be covered under text boxes or collapsed in the File Edit buttons. This will allow for more options for triggers.
7. **Check the results.** The Captures window in DynaSetup should pop back up with the text that was captured. If this text capture engine isn’t well suited for the target app, you may get a **“No Text Retrieved”** message instead of useable text. **Note** - If you do not see any worthwhile text results, it may be necessary to try a different text Capture Engine.
8. **Add additional captures if necessary.** If there are more target app windows to capture, click “Captures” on this window menu, then click “Add Capture”. An empty Capture 2 tab will appear.

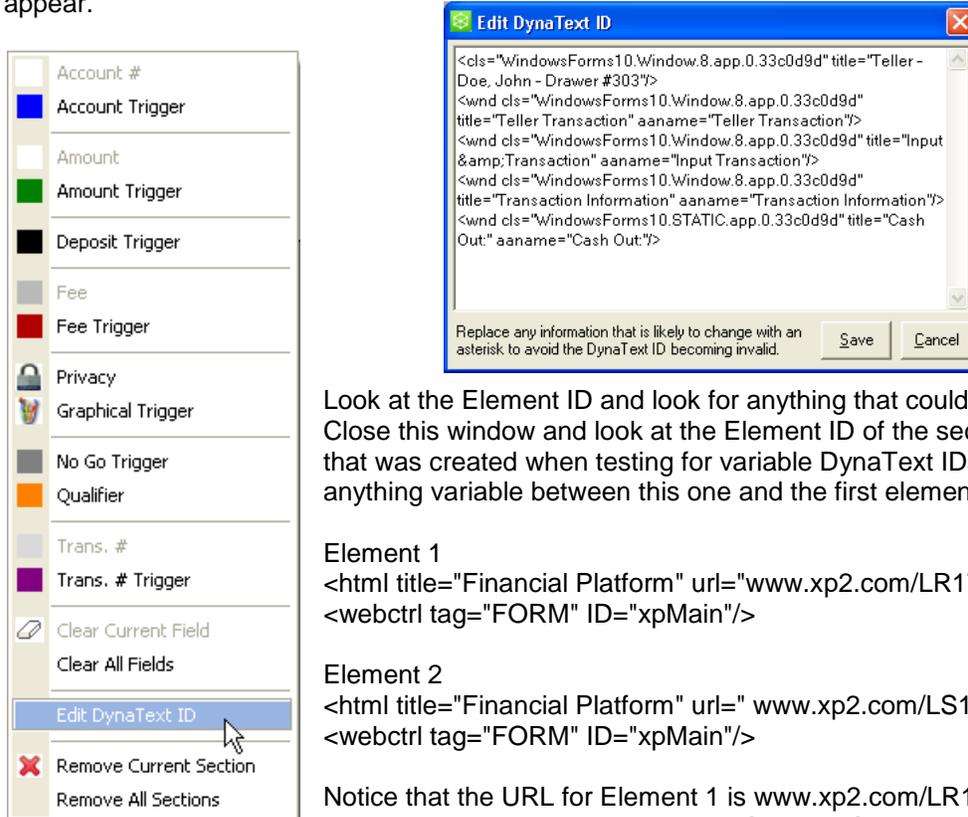
Refer to **‘Marking Captured Text’** in the T-Rex section (pg. 36) for marking the captured data.

## Editing DynaText IDs

Editing DynaText IDs are necessary to make an Element with variable information usable for every transaction. Some instances where editing the DynaText IDs: Browser based applications with variable web addresses, Windows with account information or dates in the titles, and Windows with variable form information for each instance of the window.

The best way to check to see if there are variables in the DynaText IDs is to take multiple Element captures within the same capture of the same window, closing out of the window and going back into the window before taking the capture. If the error "An entry for this DynaText section already exists in the current capture. Do you want to overwrite that DynaText section with the new capture?" occurs; the capture **does not** need to have the DynaText ID edited. If the capture comes back normally, it will need to be edited as it has changed some information in the DynaText ID.

To edit DynaText IDs, Right click on the element and select 'Edit DynaText ID'. This window will appear.



Look at the Element ID and look for anything that could be variable. Close this window and look at the Element ID of the second element that was created when testing for variable DynaText IDs. Look for anything variable between this one and the first element. Example:

Element 1

```
<html title="Financial Platform" url="www.xp2.com/LR17789"/>
<webctrl tag="FORM" ID="xpMain"/>
```

Element 2

```
<html title="Financial Platform" url=" www.xp2.com/LS17690"/>
<webctrl tag="FORM" ID="xpMain"/>
```

Notice that the URL for Element 1 is [www.xp2.com/LR17789](http://www.xp2.com/LR17789) whereas Element 2's URL is [www.xp2.com/LS17690](http://www.xp2.com/LS17690). Same screen, but different

URLs in the Element IDs. To fix this to work with any variation of the screen, a 'wild card' variable needs to replace the variable text in the Element ID. Just replace the web address with an asterisk to get it to work with any instance of that window. Example:

Element 1

```
<html title="Financial Platform" url="www.xp2.com/LR17789"/>
<webctrl tag="FORM" ID="xpMain"/>
```

Element 1 modified with 'WildCard' variable

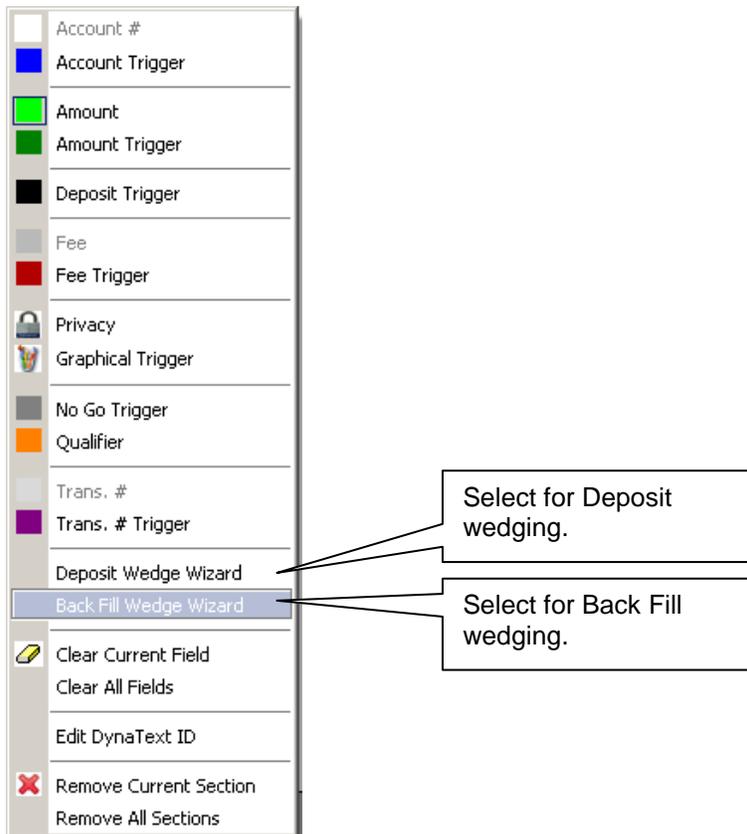
```
<html title="Financial Platform" url="*"/>
<webctrl tag="FORM" ID="xpMain"/>
```

Remove the second element after editing the first element by right clicking the second element and selecting Remove Current Section.

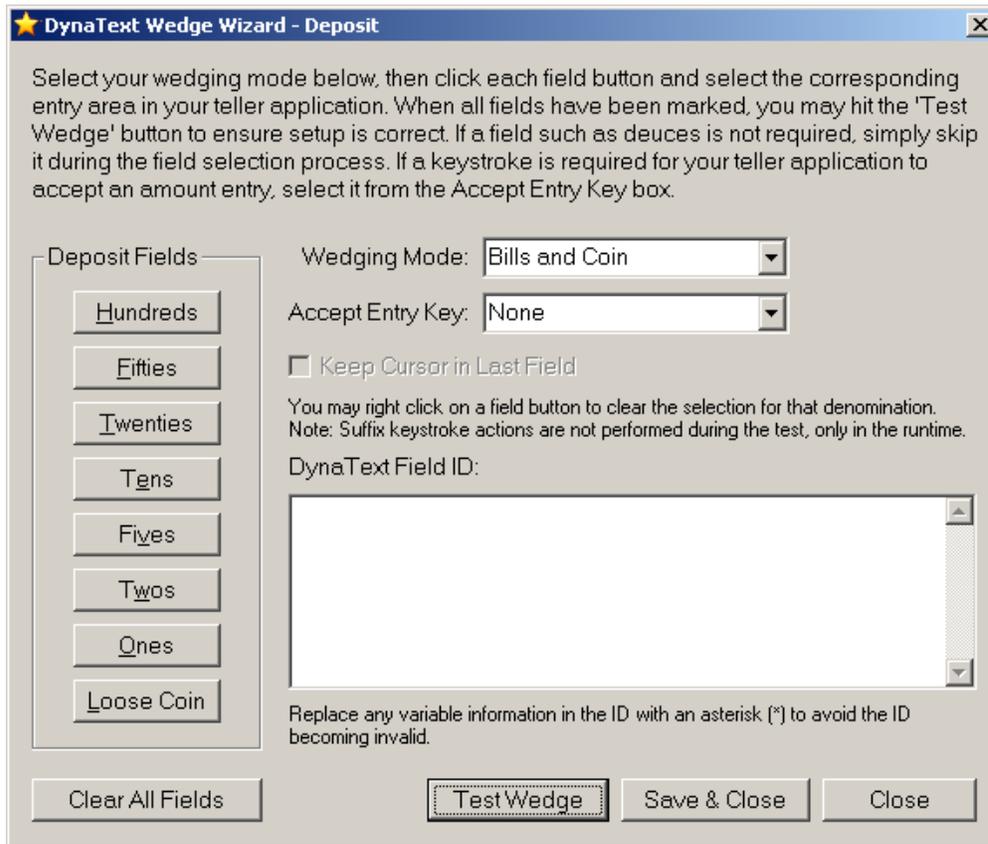
## Using the DynaText Wedge Wizard

DynaText has a unique feature for wedging Deposits and Withdrawal totals in the DynaText Wedge Wizard. Rather than using Caret Tracking to place the starting position for the totals to wedge, the Wedge Wizard uses DynaText IDs to place each individual denomination in their respective fields. This can alleviate issues with slow PCs, or applications that have no logical denominational entry.

To get into the Wedge Wizard either a Deposit capture or a Dispense capture with Backfill will need to be set up. Once set, right clicking anywhere on the capture will bring up the Capture Trigger menu. From there, select either Deposit Wedge Wizard or Back Fill Wedge Wizard depending on the capture.



Once selected, the Wedge Wizard window will appear. The Wedge Wizard looks the exact same and can be used the same way in either Deposit or Back Fill mode. Once in the Wedge Wizard menu there are various options that can be changed depending on how the values need to be put into the application.

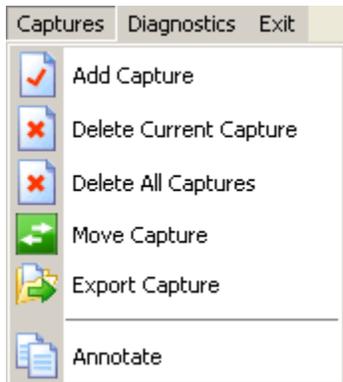


- **Wedging Mode** – Defines how the values are to be entered. Can be set to Bills and Coin, Lump Sum Bills, or Lump Sum Bills and Coin. Changing this option changes how the Deposit Fields/Backfill Fields is displayed.
- **Accept Entry Key** – Defines what key enter the amount in the various fields that are being wedged into.
- **Keep Cursor in Last Field** – After the last field is wedged into, this defines if the cursor is to remain in the last field wedged or moved off of the last field with the Accept Entry Key.
- **Deposit/BackFill Fields** – This section changes depending on what the Wedging Mode is set to. If it is set for Bills and Coin it will give; Hundreds, Fifties, Twenties, Tens, Fives, Twos, Ones, and Loose Coin. If it is set for either Lump Sum Bills or Lump Sum Bills and Coin it will give; Lump Sum. Pressing one of these buttons will allow the capture of the DynaText ID of the respective entry field.
- **Clear All Fields** – This clears any DynaText IDs that are attributed to the Deposit/Backfill Fields.
- **DynaText Field ID** – After Capturing a Deposit/Backfill Field, the DynaText ID will show in the box below. Any variable information in this field will need to be replaced with asterisks. Refer to the Editing DynaText IDs section of this manual for help regarding this.
- **Test Wedge** – When done setting up the various Fields, this button will test the current wedging configuration with one piece of each denomination.

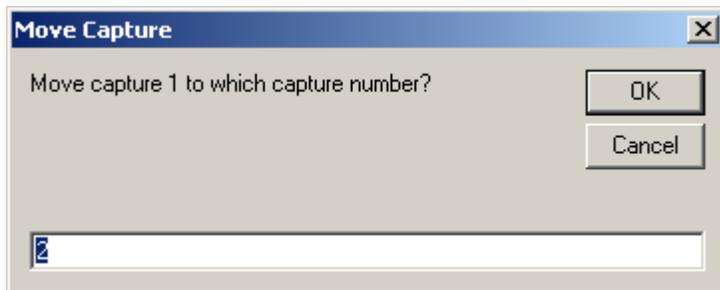
- **Save & Close** – When done setting up the various Fields, this button will save the current settings and close out of the DynaText Wedge Wizard.
- **Close** – Pressing this button will close out of the DynaText Wedge Wizard discarding any changes made.

## Arranging DynaText Captures

DynaText Captures cannot be reordered through the Format Settings window like T-Rex but instead has to be done using the Move Capture option in the Captures Menu. First Select the Capture that needs to be moved. Next, go to Captures and Move Capture.



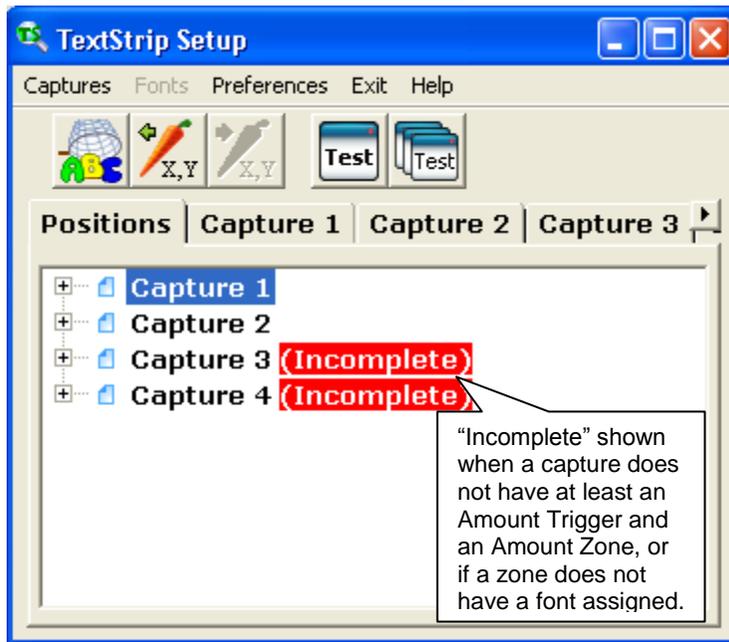
The Move Capture window should appear. In this window, type the number of where to move the current capture to. All other captures will be reordered to match the change.



# Graphical Capture Method

## TextStrip Mode

For TextStrip mode, switch to the **TextStrip** capture engine as shown above (All previous captures must be deleted before a different capture engine can be chosen. If not, the selections will all be grayed out.). Click **Captures** on the main window's menu. The following capture window will be shown (you may maximize it if convenient to):



TextStrip is different from other capture methods in that it requires that we “build” a font for any of the digit entries (amount, sequence #) that DynaCash will be using. The digits we need are 0 - 9, comma (only if a comma shows in the cash out amounts of \$1,000 or more), a decimal point, and a “\$” symbol (only if a \$ shows in the cash out amount). Occasionally we may also need the minus sign, or the left parentheses, which can signify a negative value.

## Overview of TextStrip Captures

The general steps to be taken to set up DynaCash to use TextStrip are as follows:

1. **Evaluate the customer’s application** to determine which screens it will be necessary to dispense from. Try to identify first if there is a common screen that can be used which always shows the cash back amount to the customer. If the app doesn’t have a common screen then it will be necessary to identify the individual screens.
2. **Evaluate the fonts in the Cash Out fields.** Determine if the fonts in any number field (Amount, Fee, Trans #, or Account #) are the same between fields and in all screens. If the font is the same, only one font database will need to be set up. If different fonts are used for different fields or screens, then a font database will need to be set up for each different one.
3. **Capture all necessary screens.** Determining which screens need to be captured is covered in more detail in steps 1 and 2 and in the individual sections that follow.
4. **Create a font database for each different font.**
5. **Mark the zones in the captures and set up any Positional triggers.**
6. **Assign fonts to any Amount, Fee, Trans #, or Account # zones.**
7. **Test using “Test Sample” in DynaSetup. Then test in DynaCash.**

## Capturing with TextStrip

First, decide the best you can if all of the numerical values in the cash out or sequence number fields we're interested in use the same font and font size. This is generally true but not always. If there are different fonts, we'll need to build a font for each. Otherwise, as is usually the case, we can build and save the font once and it can be assigned to all captures.

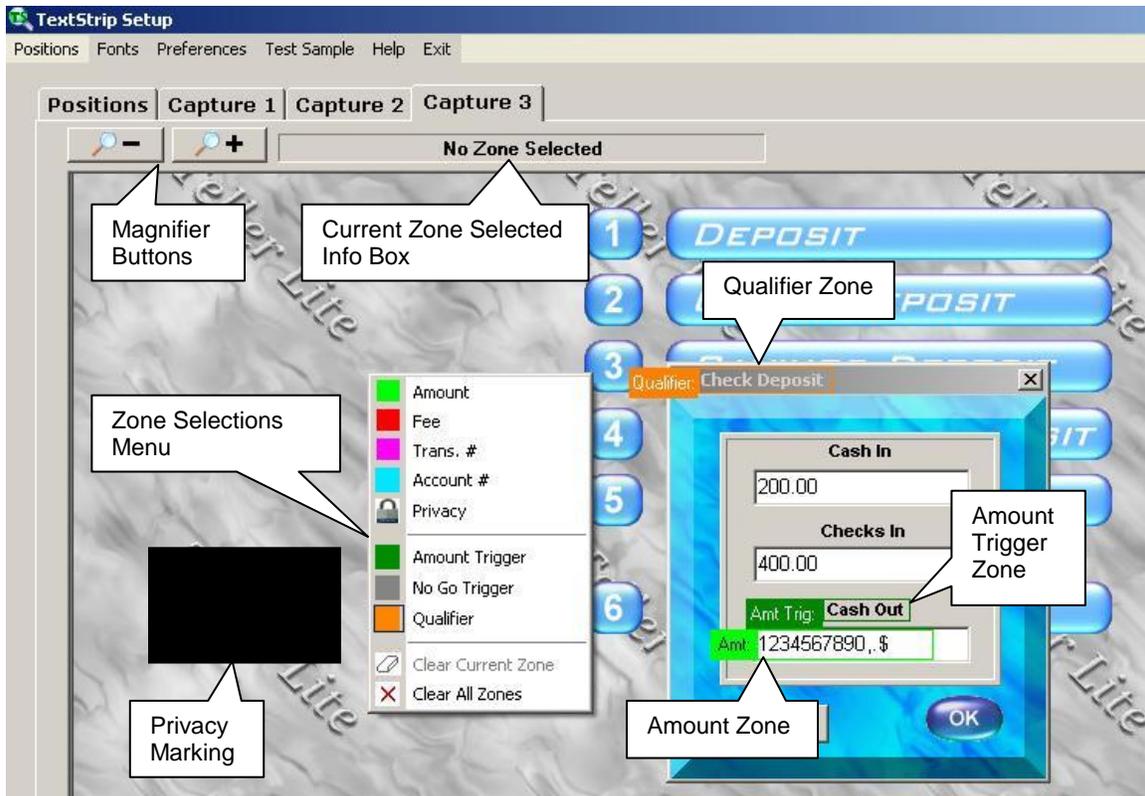
Next, we will capture the screens that are dispensed from. We will also use these captures to build our font. We need to be certain that the screens we capture contain the digits 0 – 9, a comma (if used), a period, and the dollar sign (if used) entered into the actual cash out field in the target app. If there are fields that use the negative amount characters “ - “ or “ ( “, these will also need to be present in the captures. The digits can be in any order, as long as we have them all. It may be impossible to enter all of the digits in one capture, which is fine. We can assemble the font from multiple captures. So cash out amounts of 12.34, 56.70, and 1,089.00 in 3 different captures is useable.

### Captures are done as follows:

1. Click **Captures** on the DynaSetup menu bar. You will see the window shown above. A small window is also shown with a button and text that reads: Click the button then hit <capture hotkey> to capture. Note what the capture hotkey has been set for then click the button. TextStrip Setup will minimize. You are ready for Capture #1.
2. Bring up a screen from the target app that has a Cash Out amount.
3. Have somebody who is familiar with the app fill in the fields *exactly* as they would for a real transaction. Be certain that a cash out amount is visible and try to include as many different characters as possible from those that will be used for setting up the font character set (the numbers 0-9, comma, period, and dollar sign). If a sequence number will be used, have a number entered for that (all numbers 0-9 if possible).
4. *Make sure the target app window is active (has system focus) by using the mouse and clicking on the teller app*, then press the Capture hotkey (F8 in above example).
5. If there are more target app windows to capture, click on the Positions tab and click **Captures** on the window menu, then click **Add Capture**. An empty Capture 2 will appear.
6. Click the button (to minimize DynaSetup), then click on the new target app window to make it the active program. Press the capture hotkey when ready.
7. Continue adding new captures and completing the capture process as described in the steps above, until all useable target app windows and their “qualifier” variations (if any) have been sampled.

**Note** – for any capture that you just completed, if for some reason you want to recapture it, click on the Positions tab, select the capture, then click the button. Hit the capture hotkey and you will be asked if you would like to overwrite the current capture. Alternatively, you may delete the capture and add a new one at the “Captures” menu selection at the top of the window.

## Marking the Graphical Zones



The window above illustrates graphical zone markings for a Check Deposit transaction in the Add-On Technologies, Inc. Teller Lite test app. It also shows the Zone Selections menu.

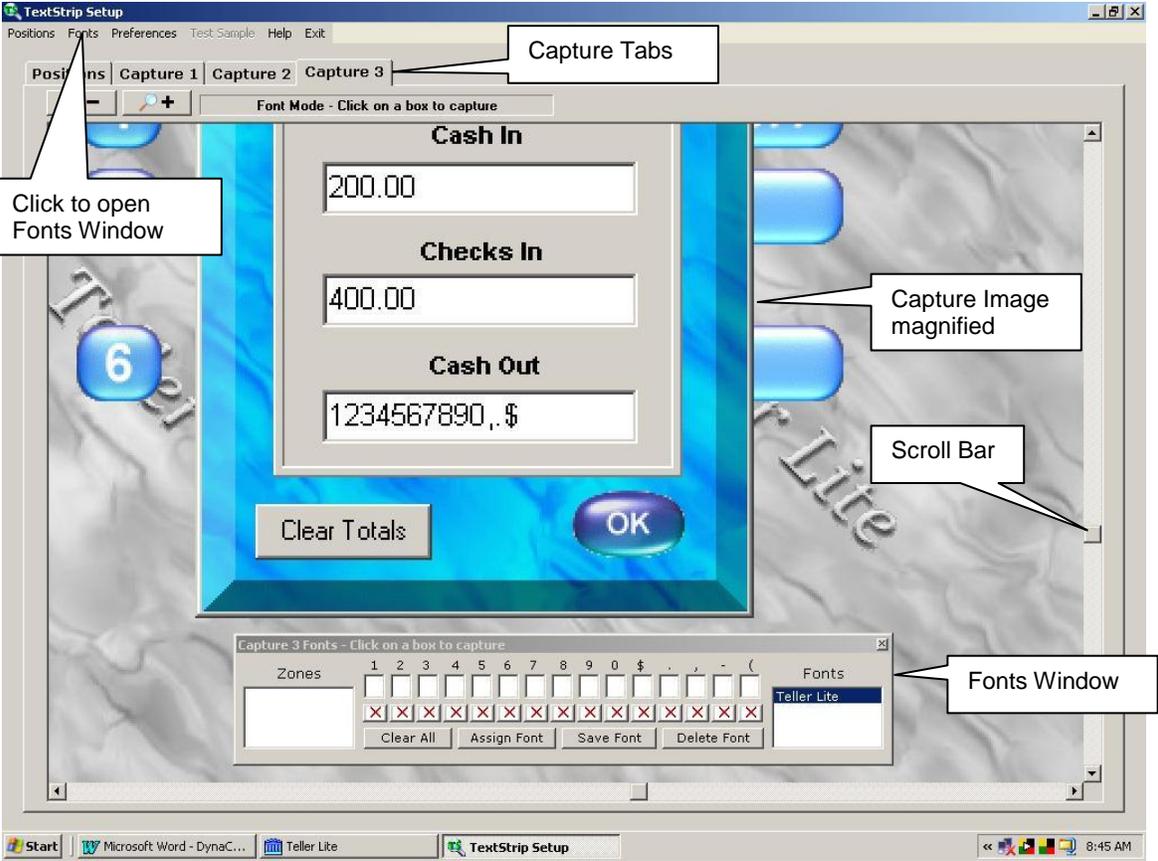
- Right clicking the mouse while in a capture of DynaSetup will bring up the Zone Selections popup menu shown above.
- All dispenses require at least an Amount Trigger and an Amount to be selected.
- Clicking on one of the selections will hide the popup menu and will bring up the drawing hand which is used to draw a rectangle around each zone. Click and drag your mouse over the appropriate text to select it. **Always try to draw zones so there are a few pixels of “white space” around the text. It is also better to encircle the entire box that is enclosing the text, if one is present**
- The current zone is shown in the info box just under the Capture number.
- + and - Magnifier Buttons allow the window to be magnified for easier zone marking. You can also use the (+) and (-) keyboard keys to zoom.
- **Amount Trigger** – Used to identify the screen as a screen that is dispensed from.
- **Amount** – The field containing the amount to be dispensed.
- **No Go Trigger/Qualifier** - No Go fields can be used to identify screens that shouldn't be dispensed from and conversely, Qualifier fields can be used to dispense only if certain extra text is present.

- **Fee** - If a transaction include fees, and a Cash Out amount with the fee subtracted is not shown anywhere on the screen, the Fee fields can be used to read the fee amount. The fee amount is then automatically subtracted from the Cash Out amount.
- **Trans #** - Trans # fields can be used to prevent multiple dispenses from the same screen.
- **Privacy** - Privacy marking allows you to draw a black block which can be used to block out personal data text that is captured. Privacy selections are marked in an un-zoomed mode. To draw, right click and from the zone selections menu choose Privacy. This put you in a mode where you may draw as many privacy zones as necessary without having to keep selecting Privacy. When all zones have been drawn, right click and select Exit Privacy to get out of Privacy mode. **Privacy zones are permanent and may not be un-done (so they can't be un-done by an unauthorized person), without recapturing the window.**
- **Clear Current Zone** - To clear just one zone, right click to bring up the zone selections and choose that zone. Right click again and choose "Clear Current Zone" to delete the zone marking.
- **Clear All Zones** - Deletes all zone markings for the current capture (except Privacy blocks).
- **Account #** - The Account # fields are for a future release of DynaCash.
- **Deposit Trigger (Recyclers Only)** – Marked to identify a screen that has a Cash In field.

# Setting Up the Font Database

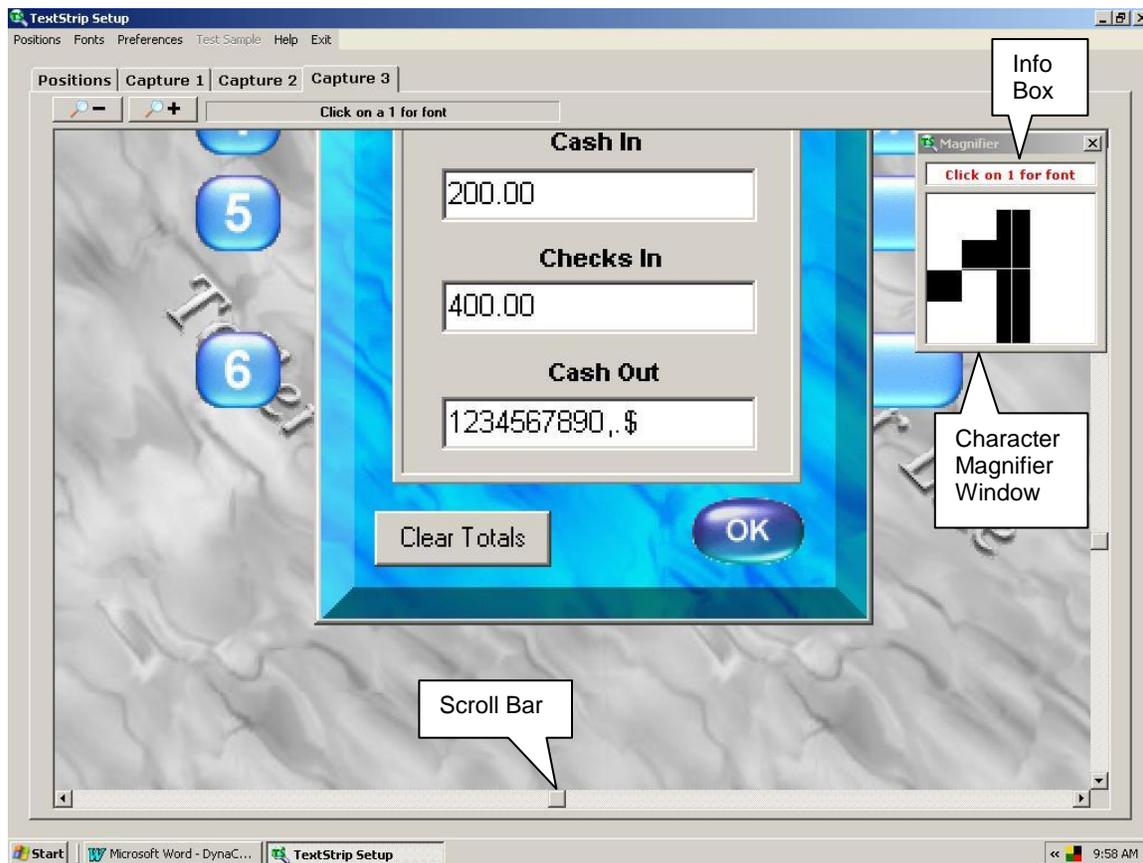
If any of the capture tabs are opened, clicking on the "Fonts" menu selection at the top of the window brings up the Fonts window shown below.

The capture is magnified when the Fonts window is opened, so you may need to use the scroll bars at the sides of the capture window or use the arrow keys to bring the cash out field into view.



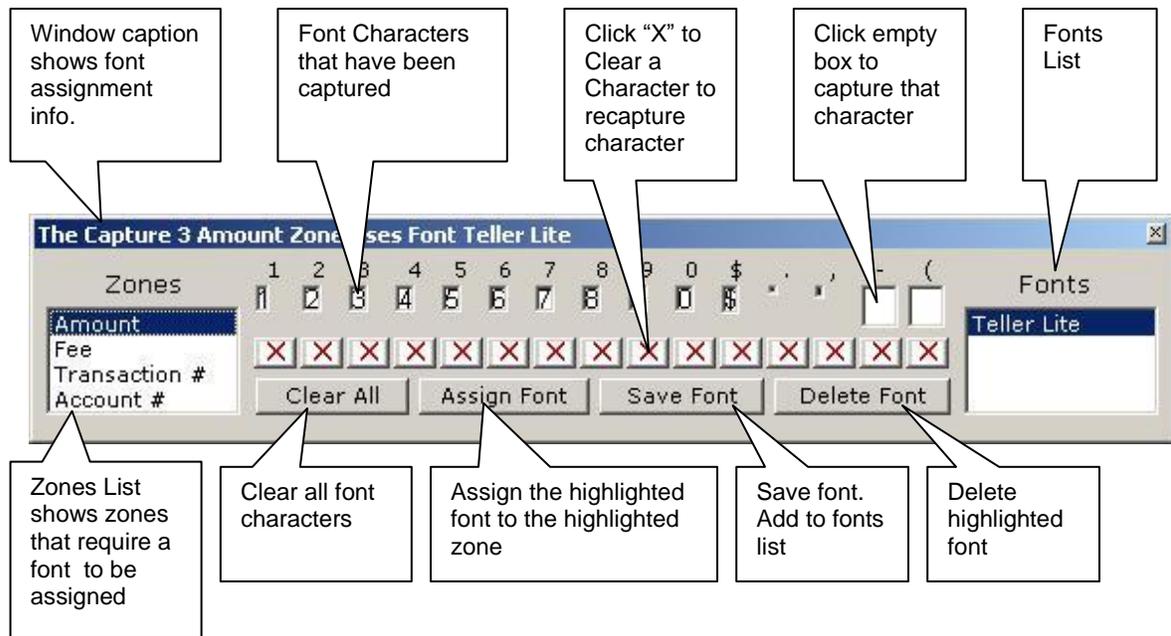
## Capturing Font Characters:

1. In the Fonts window, each character has a white box and a red "X" below it. Click the white box under the first character you would like to capture. The Fonts window will minimize itself and a magnifier window will open as shown below.
2. Move the cursor over the character you're capturing. Scroll bars are located at the bottom and right side of the window. Use these if necessary to bring the area of the screen that contains the amount fields into view. The character currently being captured is listed in the info box at the top of the magnifier window. The magnifier window allows you to easily place the crosshairs precisely over the character. Clicking on the character captures the character, closes the Character Magnifier window, and brings back the Fonts window.
3. Following the steps above, continue to capture all the characters that are in use by the app you are capturing from. It is not necessary to capture characters if they are never used in the fields we are interested in. For instance, if the app does not use a dollar sign in the cash out field, it is not necessary to capture one. This also applies to the rarely used "negative" amount characters, " - " and " ( ".
4. With the Fonts window still open, you may click on any Capture Tab to move to another capture if font characters were captured from multiple windows.
5. If it is necessary to recapture a character, click on the red X below the character in the Fonts window to delete it. Click the white box that reappears for that character and recapture it.
6. **Save the Font** by clicking on the "Save Font" button in the Fonts window. Enter a unique name for the font and click OK.



## The Fonts Window

The following shows the various parts of the Fonts window.



## Assigning Fonts

All captures must have at least an amount trigger and an Amount zone selected. The Amount zone must have a font assigned to it. Other zones that also must have a font assigned are the Fee, Trans #, and Account # zones.

**If a capture does not have an Amount zone or an Amount Trigger, or a font has not been assigned to a zone that requires it, the capture will be marked *Incomplete* in Red to the right of the capture # in the Positions tab window.**

### To Assign a Font:

1. Click on the Capture # tab.
2. Click on the "Fonts" menu selection at the top of the window to bring up the Fonts window.
3. The Zones list should show at least an Amount zone, and will also show any other zones which require a font to be assigned. Zones that require a font to be assigned are the Amount, Fee, Trans #, or Account #. Select the zone that needs a font assigned, select a font, and then click "Assign Font".
4. Repeat step 3 for any other zones (Fee, Trans #, or Account #) that are in the zones list.

## Working with Fonts

Initially capturing a font is covered in the previous section “Setting Up the Font Database”. Some additional options for working with fonts are shown below.

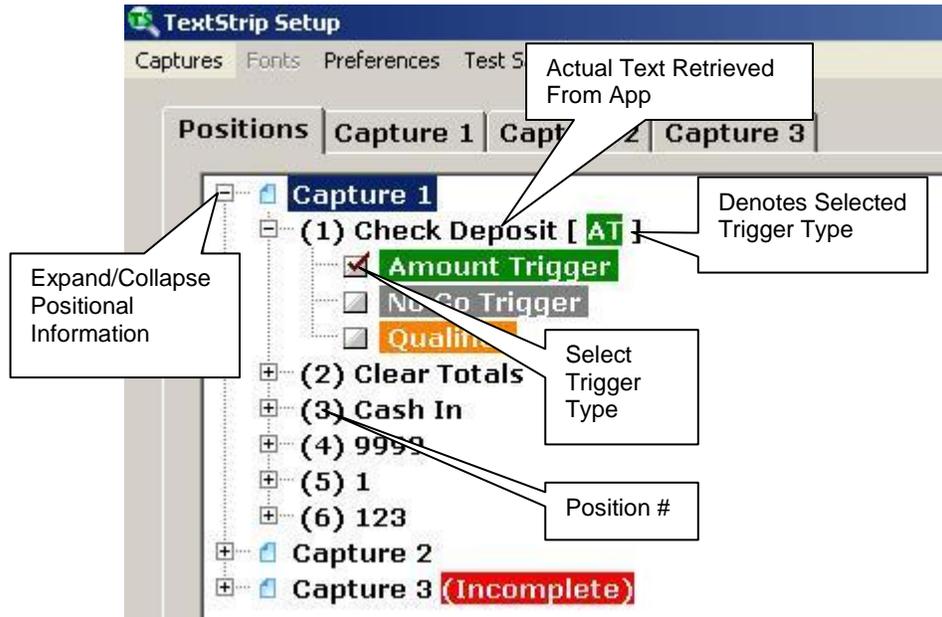
**Editing Saved Fonts** – Double clicking a font in the fonts list of the Fonts window will fill in the font characters with that font and it can then be edited. Any edits must be saved again.

**Editing Fonts with the “Clear All” or Clear Character (Red X) Buttons** - The “Clear All” button will clear all the white character boxes for the current font. Clicking on the red X below the character can clear individual font characters. The font characters can then be captured again as described in “Setting Up the Font Database”. If a font was saved previously, the change will not take effect unless the font is saved again.

**Deleting Fonts** - Choosing a font from the Fonts List in the Fonts window, then clicking “Delete Font” will delete Fonts. You are then asked to confirm the deletion.

## Positional Triggers

Clicking on the Positions Tab after captures have been made will bring up a screen similar to the one shown below.



When a capture is made, information is returned on positions and contents of text fields in the captured image as well as the image itself. For instance, the window caption is always returned as position 1. To view this information click on the Positions tab and select a capture.

Click on the + next to the capture # to expand the position information. Click on the + next to a position # to see the trigger selections. Click the box next to a trigger type to select that trigger type. The trigger type will appear next to the position so they can be viewed even after the trigger selections have been collapsed.

If the text in these positions stays constant (or a portion of the text stays constant, more on this later), the text in these positions can be used as triggers to identify the window.

You cannot use both a Positional trigger and a Graphical trigger for the same type of trigger, but you can, for example, have a Positional Amount Trigger and a Graphical Qualifier. You could also use a Graphical Amount Trigger for one capture, and use a Positional Amount Trigger for another capture.

As mentioned earlier, if only part of the text in a position is constant, it is still possible to use the text in that position as a trigger. You may, for instance, have a screen caption that identifies this transaction as a "Cash Check – Teller 1001". In this instance the number following the word "Teller" changes according to the user that is signed on. The text in the position can be edited so the phrase "Cash Check – Teller" is used as a trigger. The teller number following it would be ignored. Edit the captured text as follows:

1. Expand the capture and locate the position that contains the text to be altered.
2. Right click on the actual captured text.
3. A secondary "Edit Capture Text" window pops up with the text in an edit box.
4. Click onto the text, edit, and click OK to close the window and save the changes.

## Finalizing Captures

After all captures are complete, click on the Positions tab and ensure that none of the captures are labeled "Incomplete". An Incomplete capture is missing either an Amount Trigger, Amount zone, or font assignment for an Amount, Fee, Trans #, or Account # zone, and will not be used by DynaCash.

Captures are automatically saved when the Captures window is exited.

## Testing Captures

All final Testing should be done using the DynaCash program. It is possible to do a preliminary test of the captures in DynaSetup.

2. Click on "Test Sample" at the top of the TextStrip Setup window and choose either "Current Capture" or "All Captures". If "Current Capture" was selected, only capture info from the capture currently selected will be used for testing. The Current Capture is either the capture tab that is currently selected, or the capture that is highlighted on the Positions tab window. DynaSetup will minimize itself.
3. Click onto a dispensing window in the user's app to make it the active window and hit the Capture Hotkey (F8 is the default hotkey. It is set in the DynaSetup main window under "Hotkeys") The window shown below will pop up with the results:

The fields show what DynaCash retrieved for all the different triggers and zones.

- The Capture that DynaCash used to return the listed results is shown at the top of the window. If Current Capture had been selected, then that capture will be the one listed. If All Captures had been selected, then the capture shown is the one DynaCash found that matched.
- An amount will always be shown with what was captured from the Amount zone. If nothing is there the message "Zone is blank" will be displayed. If an unrecognizable character is returned, "Error -?" will be displayed. Any characters it recognized may also be displayed.
- If a trigger has been set up it will either display the Trigger type (Graphical or Positional) and "Found" or "Not Found".
- If a trigger or zone is not set up, it will show "Unused" in the field.

Knowing what DynaCash returned can be very helpful when troubleshooting why a capture is not working.



The screenshot shows a window titled "Test Results" with a close button in the top right corner. The window displays the results for "Capture 1". The results are as follows:

Field	Value
Amount Trigger:	Found
Amount:	12.00
Fee Trigger:	Unused
Fee:	Unused
Acct. # Trigger:	Unused
Account #:	Unused
Tran. # Trigger:	Unused
Transaction #:	Unused
NoGo Trigger:	Unused
Deposit Trigger:	Unused
Qualifier Trigger:	Unused

# Re-Ordering Captures

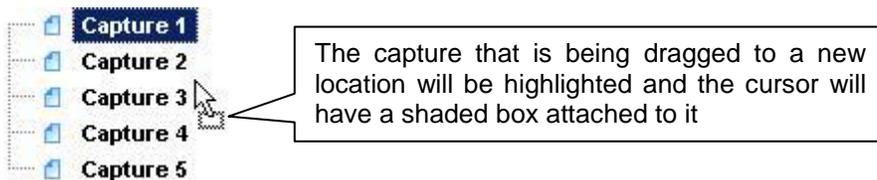
Sometimes it becomes necessary to change the order of the captures in order to make DynaCash work.

For example, an app may have the standard wording “Cash Back”, then the amount in almost all the windows. You could set a single capture using “Cash Back” as the Amount Trigger. Now, let's say that the app uses basically the same screen for an On-Us Cashed Check but the wording “Cashed Check” is also present and it has the dispensed amount following it and Cash Back shows a zero amount. If you create a second capture that uses “Cashed Check” as an amount trigger, then you may run into problems with the Cashed Check transaction. It may see the “Cash Back” as a zero amount and exit. If we re-order the captures to look for the “Cashed Check” first we would find it for this particular transaction type. If we didn't find it we would then go on to look for “Cash Back”.

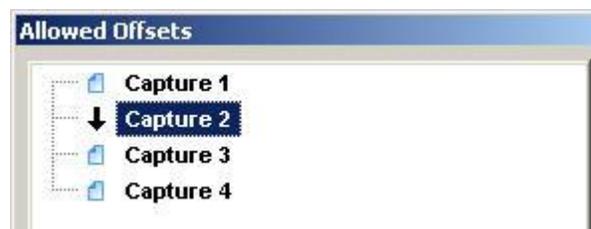
To avoid having to redo the captures in a certain order, we have a method of re-ordering the captures. It is done in a similar way as if dragging and dropping folders in Windows.

## To Re-Order the Captures

- Positional and Graphical Capture Methods have the list of captures under the Positions Tab. String Capture Methods have the list in the Formats window. DynaText does not allow for reordering of captures.
- Left click on the capture you want to move and continue to keep the left button held as you drag the capture. You have to click on the actual Capture #. If you've clicked on it correctly then the capture will be highlighted and the cursor will have a shaded box attached to it as shown in the picture below.



- Drop the capture onto the capture # that you would like the capture to be. If you drop the capture onto Capture 3, then it will become Capture 3. What was Capture 3 will move up in the list and become Capture 2. If you drop it on Capture 1 then Capture 1 will become Capture 2. If you drop it on the last capture, then the last capture will move up one spot and be replaced by it.
- The capture it was dropped on will be highlighted and an arrow appears next to the capture that indicates the direction it was dragged from.



# Deposits (Recyclers Only)

## Configuring Deposits Overview

When the Deposit Hotkey is pressed, DynaCash examines the current active window to determine if a valid Deposit Trigger is present. This serves to identify that window as a valid screen that can accept a currency input. If configured, Caret Tracking can further determine that the cursor is positioned in the proper field to begin entering the dollar amounts. After prompting the user to run their currency through the recycler, DynaCash then takes the counts and mimics the keystrokes that an operator would take to enter those amounts manually. This is usually done in less than a second and without the possibility of an error in keying in the amounts. Following is an overview of the process used to set up the Deposit Triggers and formatting in DynaSetup.

- 1. Identify Deposit screens** – Any window, which contains a “Cash In” field to enter currency received from a customer, is potentially a Deposit screen. This could be any window where entries are made for deposited cash or where other cash entries are keyed in (such as cash drawer balancing).
- 2. Capture the Deposit Screens** – Refer to the previous sections, which cover the different capture methods for more details on choosing a Capture Method and the actual method for doing the captures.
- 3. Mark a Deposit Trigger** – Again, refer to the previous sections, which explain how the screen marking is done for the different Capture Methods.
- 4. Collect Info about the Application** – You’ll need to know where the cursor should be when the teller begins to make their entries. You’ll also need to know how the entries are made in the application so the Format and Keystroke selections in DynaSetup can be made properly. For instance, you’ll need to know if the user has to enter the currency as a lump sum or by denomination. If entering by denomination, is the entry made by the number of bills or by the dollar value? Does the user have to follow a dollar value with “.00”? What keystrokes are necessary to accept the entry and move to the next field? Where 2 are’s entered? Where should the caret come to rest?
- 5. Make Necessary Format & Keystroke Entries in DynaSetup** – Different Capture Methods use slightly different methods in DynaSetup to properly format the Deposit to enter properly. These are covered in more detail in the following sections.
- 6. Capture the Caret Position** – DynaCash contains a Caret Tracking feature that tests for the Caret Position before the entries are sent to ensure that the Entry Caret is in the first denominational field. If Caret Tracking is going to be used then a second Caret Position capture of the Deposit screen is made after ensuring that the Caret is in the correct position.
- 7. Test the Deposit** – DynaSetup can test that the Deposit Trigger is found, but it is also necessary to test with DynaCash to see that the values are entered in the actual application correctly.

## Identifying Deposit Screens

- Any window, which contains a “Cash In” field to enter currency received from a customer, is potentially a Deposit screen. This could be any window where entries are made for deposited cash or where other cash entries are keyed in (such as cash drawer balancing).
- A Deposit Trigger needs to be chosen which uniquely identifies that screen as being used to input currency. An example of an ideal Deposit Trigger would be a window caption like “Deposit”. Another example could be the wording “Cash In” appearing on the screen.
- Different screens may have different formats for entering the currency. Some of the screens may have a lump sum entry box and other screens may have a field for each denomination. The Deposit Trigger must identify the screen so that the proper formatting can be applied to the current screen.
- Some applications let the user hit a hotkey such as “F3” to pop up a screen that accepts currency inputs by denomination. If this is the case, then this may be the only screen that you need to set up to accept Deposits. Anytime currency is going to be counted into the Recycler, that screen is popped up, the Deposit Hotkey is pushed, and the Deposit procedure is followed.
- Some applications may have a number of screens that only accept a lump sum value in a “Cash In” field. If most of the screens have a common label preceding the Cash In field (e.g. “Cash In”) then it may be desirable, if possible, to use a string capture method like T-Rex and use that “Cash In” wording as a common Deposit trigger for all Cash In screens. This is dependent though on T-Rex working for the dispensing screens too.

You would have to be careful not to use something that was too generic. If you used something like just the word “Cash”, then a screen that says “Cash Out” or “Cash Disbursed” would also be accepted as a deposit screen if the Deposit hotkey was pushed.

## Capturing Deposit Screens / Marking Deposit Triggers

Refer to the previous sections, which cover the Positional, String Capture, and Graphical capture methods. They contain more details on choosing a Capture Method, doing the captures, and marking Deposit Triggers.

## Keystroke Settings Overview

There are two main areas in the Capture Setup that are used to define the keystrokes. The first is **Format**. The second is **Keystrokes**. The Keystrokes settings for Positional and Graphical Capture Engines are on the **Bills** and **Deuces** tabs. String Capture has them on a **Keystrokes** menu selection at the top of the Captures window.

## Collecting the Teller App Information

The following information about the application is needed to set up and operate the recycler properly for a deposit.

- 1. The Start Position** – The cursor **MUST** be positioned correctly when DynaCash inserts the keystrokes to make the amount entries. If not, then the entries may be in the wrong fields, or not entered at all. Most often this is accomplished by having the user click or tab into the first field where the entry is made. DynaCash has a Caret Tracking feature that works with many apps. It can check the caret position before it begins a Deposit and warn the user if it is not placed correctly, but this needs to be set up initially.
- 2. Keystrokes** - You'll need to know how the teller makes entries into the Cash In window, prior to setting up the captures. Please keep in mind that DynaCash merely duplicates the exact keyboard action that a teller would use. So if we carefully observe the keystrokes the teller does to manually key in their cash-in currency entries, we can make the settings correctly.
- 3. The Resting Position** – You'll need to know where the cursor should come to rest after the values have been inserted.

## Accessing Format & Keystroke Settings in Positional/Graphical Capture Modes

Start DynaSetup, and then click “Captures” to get to the DynaCash Captures screen.

A Deposit Trigger has to be marked. After the Deposit Trigger is marked, then Setup will allow access to the Format and Bills Keystroke settings shown below.

The Deuces tab is not used unless “Deuces Outside” is checked.

Keystroke settings for Prefix, Interfield, and Suffix Actions are set by clicking on the Bills and Deuces tabs.

Click the plus sign to the left of Format to expand and change the settings.

The Deuces tab is not used unless “Deuces Outside” is checked

A Deposit Trigger must be Marked to allow Keystroke settings in Bills, Deuces, and Format active.

**DynaCash Captures - Positional Mode**  
Captures Diagnostics Test Sample Exit

Positions Bills Deuces

**Capture 1**

- Format**
  - Track Caret (132,58)**
  - Use Values**
    - Use Sum Only
    - Whole Number Values
    - Values Append ".00"
    - Values Append "."
    - Values Append "00"
  - Use Pieces
  - First Field Is Ones
  - Include Deuces
  - Deuces Outside

(1) Deposit [ DT ]

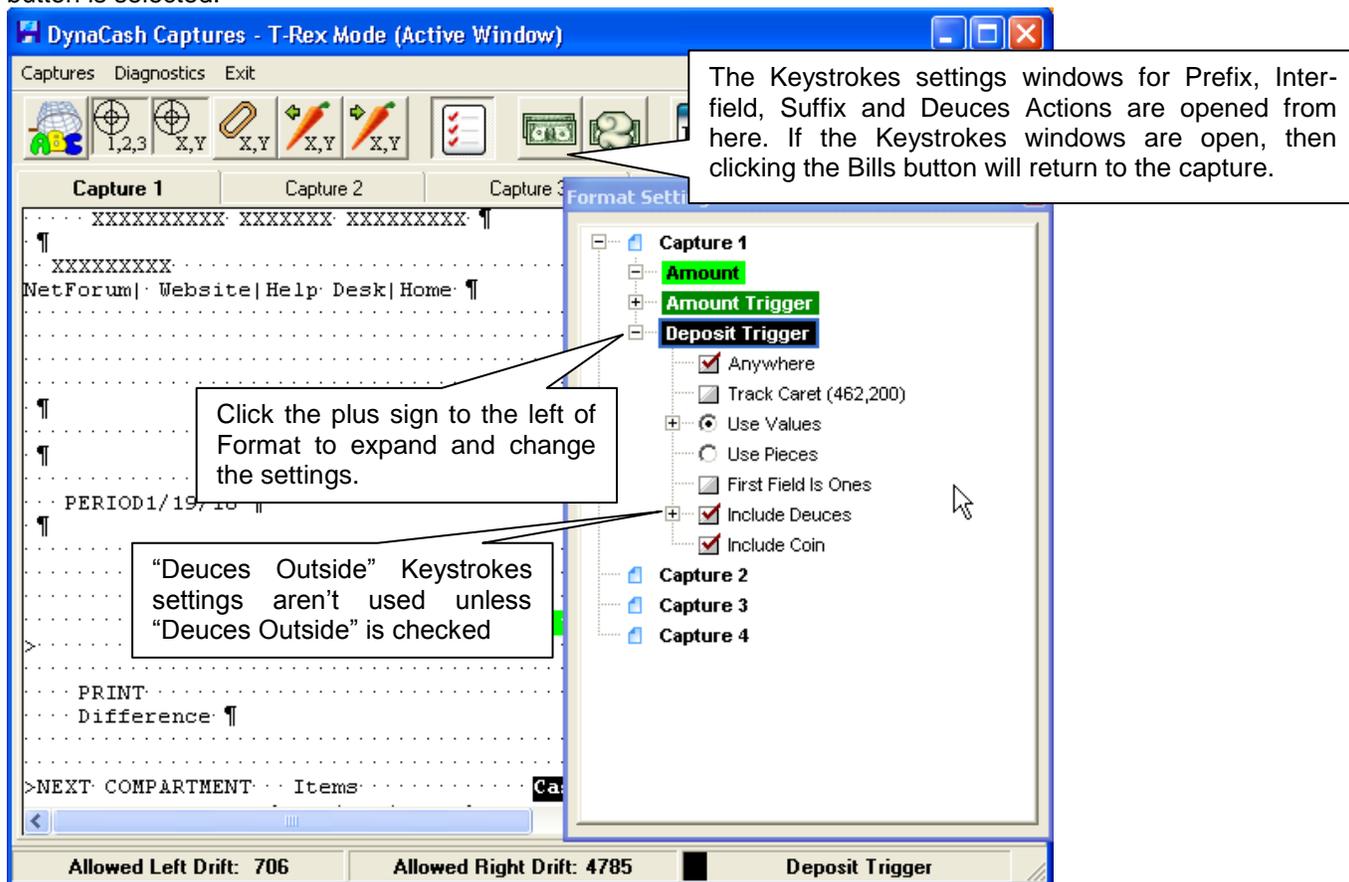
## Accessing Format & Keystroke Settings in String Capture Mode

Start DynaSetup, and then click “Captures” to get to the DynaCash Captures screen.

A Deposit Trigger has to be marked. After the Deposit Trigger is marked, then Setup will allow access to the Format and Bills Keystroke settings shown below.

The Deuces Button is not used unless “Deuces Outside” is checked.

If the Format window with the Format settings is not shown, make sure “Show Format Settings” button is selected.



## Format Settings

The Format Settings determine the way the counts from the Recycler will be input into the app, and the order of the denominational fields.

The Format setting selections shown are the same for all Capture Methods. They can only be accessed if DynaCash is in Recycler mode and a Deposit Trigger has been marked. The method of accessing the format settings can differ slightly between Capture Methods and is covered on the next pages.

Following are a number of characteristics of the target application that need to be considered, and what Format settings the answers would affect:

Format Setting	Application Characteristic
----------------	----------------------------

Back Fill Format	DynaCash can automatically place deposited amount values into the application window? Checking "Back Fill Format" enables the setup for this feature.
Track Caret	Would you like DynaCash to check the Cursor position before it attempts to insert the values into the application window? Checking "Track Caret" will enable this feature. It will also be necessary to do a Caret Position capture for this feature to work correctly.
Only (1) can be checked Use Pieces Use Values	Does the entry field take a dollar value or a piece count? If it takes the entry as a dollar value then "Use Values" would be checked. If the entry is the number of bills then "Use Pieces" would be checked.
The following five selections only apply if "Use Values" is checked	
Use Sum Only	Is it a single entry field for lump sum total dollar value of all denominations? If so, then "Use Sum Only" is checked. "Use Values" must also be checked.
If "Use Values" is checked then one of the following four selections will describe the way that the Dollar Value is entered into the application.	
Whole Number Values	(Default) This is checked if the application accepts dollar values entered as a whole number (eg.123 for \$123.00)
Values Append ".00"	This is checked if the application requires the user to type in ".00" after a dollar value (eg.123.00 for \$123.00)
Values Append "."	This is checked if the application requires the user to type in a decimal after a dollar value (eg.123. for \$123.00)
Values Append "00"	This is checked if the application requires the user to type in "00" after a dollar value (eg.12300 for \$123.00)
The following selections refer to the way that the denominations are ordered in the application window when there is a separate field for each denomination.	
First Field Is Ones	When an application has a separate field for each denomination (as opposed to a single lump sum total) the most common way of ordering the denominations is with the Hundreds at the top. If the application has Ones at the top then this box is checked.
Include Deuces	If the application has a field to enter Two Dollar Bills anywhere on the screen, then this box is checked.
Deuces Outside	Most applications have the denominations in order (usually from Hundreds down to Ones). If the Two Dollar Bills are NOT in order between the Fives and the Ones then this box is checked. Checking this box also activates an additional set of Suffix Actions which supply additional keystrokes to move the cursor to the Two's field.
Include Coin	DynaCash can automatically place deposited coin amount values into the application window? Checking "Include Coin" enables setup for the Deuces/Coin feature.

## Keystroke Settings

**To Change Settings for Shifted, Keystroke, & Count in the Bills or Deuces Window:** Click into the keyboard macro grid cell that you wish to change. A dropdown button will appear at the right side of the cell. The dropdown list has the available choices for that cell.

## Bills Keystroke Window

Pressing the Bills Button will bring up the window where you define the keystrokes that move the cursor to the Starting Position (Prefix Actions), keystrokes that move BETWEEN the denomination fields (Inter-field Actions), and any keystrokes required to accept the last denomination and move to the resting point or to a Deuces Outside field (Suffix Actions). These are equivalent to the “keyboard macros” used in many programs. The keystrokes may be “shifted” using CTRL, ALT, or SHIFT key combinations. The Count setting lets the particular keystrokes repeat from 1 (single press of the key) to 9 times (9 presses of that key one after the other).

Each type of action (Prefix, Inter-field, and Suffix) has 5 different keystrokes that can be setup to perform in the order they are selected. Let’s take, for example, an app that requires an Enter to accept the denomination, then a Down Arrow to move to the next one. Inter-field Action 1 would be set as {Enter}, then Inter-field Action 2 would be set to {Down}. Another example would be an app that required 2 Tabs to accept a denomination and move to the next field. Each keystroke has the option of having the Count set to a number up to 9. This could be accomplished with 1 Inter-field Action of {Tab}, set with a Count of 2.

These “Actions” work in conjunction with the Recycler piece (or value) outputs and the Format settings to perfectly simulate a teller doing the entries, but at a much higher speed than a teller could manage.

**Prefix Actions** - It is essential that the cursor be in the proper starting position. DynaCash is merely inserting the keystrokes when it is told to do so. If the cursor is not positioned properly, then the counts will either go into the wrong fields, or not go in at all.

Prefix actions are determined by what keystrokes (if any) the teller uses to initially move to the first denominational field (or to the Lump Sum field if the entry is made by sum only). For instance, Prefix Actions may include keystrokes that open up a denominational Cash In window from another window. Another example could be if they have to TAB twice to get to the first field every time they open the Cash In window, you might want to automate that by using one or more Prefix Actions. You have to be careful though, if you do decide to try to automate something like this. If some operators click into the first denominational field by habit, then the 2 tabs that would be performed by the Prefix action may now set the cursor in the wrong field.

Most often though, no Prefix Actions are set. Since it is so important that the cursor be in the correct position, we usually rely on the user to click or tab to the correct field before the Deposit hotkey is pressed. Also, if the window takes the counts by denomination, it is common for the cursor to already be resting in the first denominational field when the window is opened. In this case no Prefix action would be needed.

DynaCash does have a Caret Tracking feature that works with many apps. It can check the caret position before it begins a Deposit and warn the user if it is not placed correctly, but this needs to be set up initially.

**Inter-field Actions** – Inter-field actions are the keystrokes that are used to accept the value or pieces at each denominational field, and move the caret to the next denominational field. Typically this is ENTER or TAB. Inter-field Actions DO NOT accept and move off the last denomination. We rely on the Suffix actions to do that. Inter-field Actions are strictly BETWEEN denominations.

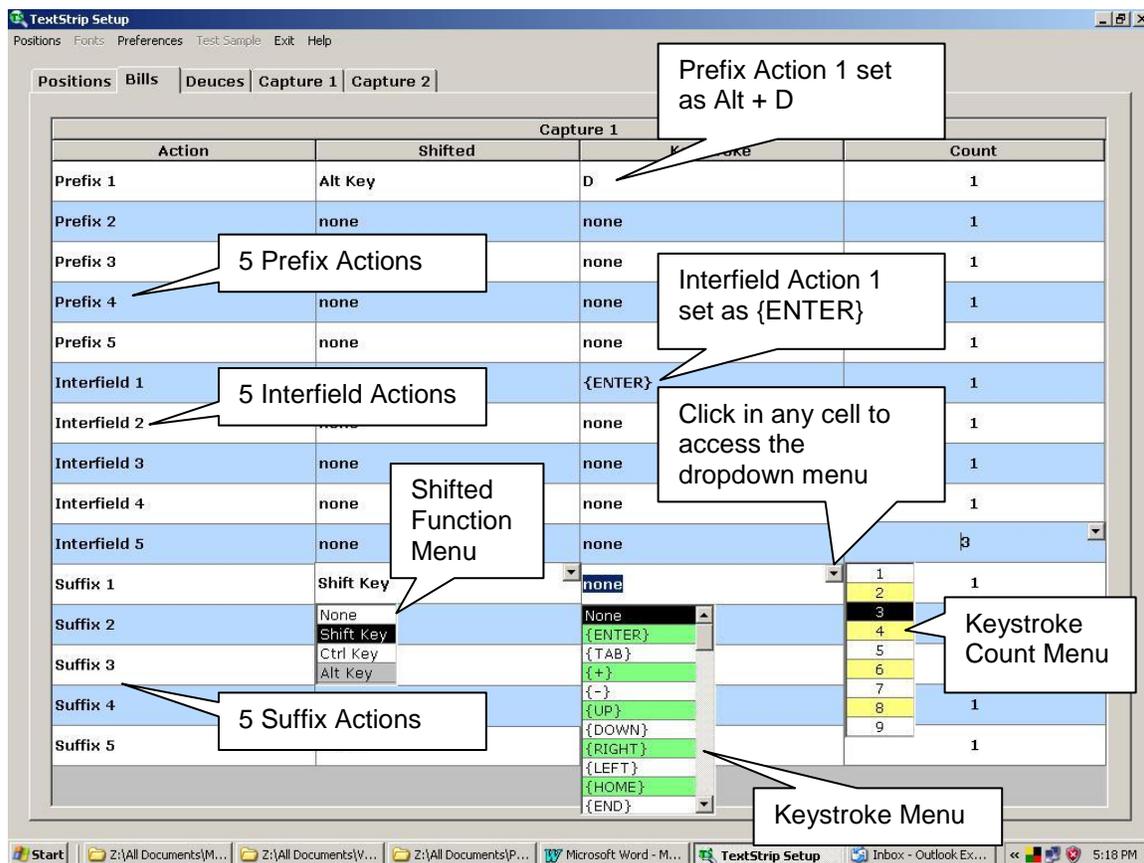
NOTE – if using a Lump Sum (Use Sum Only), no Inter-field Actions would be set, since there is only one field.

**Suffix Actions** – Suffix Actions are the keystrokes that are used to accept the value or pieces in the last of the denominational fields, and to move the caret off of this field to a final resting place (such as a Loose Coin field or a Button). If using a Sum Only, the Suffix Action keystrokes are used to accept that value and move to a final resting place. In some cases, Suffix Actions may also be used to close the Cash In window automatically.

NOTE – When using Deuces Outside, these keystrokes are used to move from the last “regular” denomination (usually \$1) to the \$2 entry field. When using Deuces Outside, the Suffix Actions act like a special Inter-Field Action to jump to the \$2 field.

### Example of a Bills Keystroke Window

(Shown with the Shifted Function, Keystroke, and Count Menus expanded for illustration only. Normally only one can be expanded at a time.)



## Deuces/Coin Keystroke Window

The **Deuces/Coin** tab lets you define additional “Suffix Action” keystrokes for the special case where the \$2 entry field is “outside” of the other denomination entry fields. It is used to create a keystroke or keystroke combination that “accepts” the \$2 entry and moves the entry caret on to the final “resting spot” in the teller app.

This tab would only be accessible if both the “Include Deuces” and “Deuces Outside” or the “Include Coin” option were checked in the Formats tab.

### Example: Deuces/Coin Keystroke Window:

The screenshot shows a software window titled "DynaCash Captures - T-Rex Mode - Active Window Method". The window has a menu bar with "Captures", "Diagnostics", "Test Sample", "Keystrokes", "Capture Method", and "Exit". Below the menu bar are two tabs: "Capture 1" and "Capture 2". The "Capture 2" tab is active and displays a table titled "Deuces / Coin - Capture 2".

Action	Shifted	Keystroke	Count
\$2's Suffix 1	None	None	1
\$2's Suffix 2	None	None	1
\$2's Suffix 3	None	None	1
\$2's Suffix 4	None	None	1
\$2's Suffix 5	None	None	1
Coin Suffix 1	None	{ENTER}	1
Coin Suffix 2	None	None	1
Coin Suffix 3	None	{ENTER}	1
Coin Suffix 4	None	{TAB}	1
Coin Suffix 5	None	{+}	1

# Capturing the Caret Position

The steps to capture a caret position are as follows:

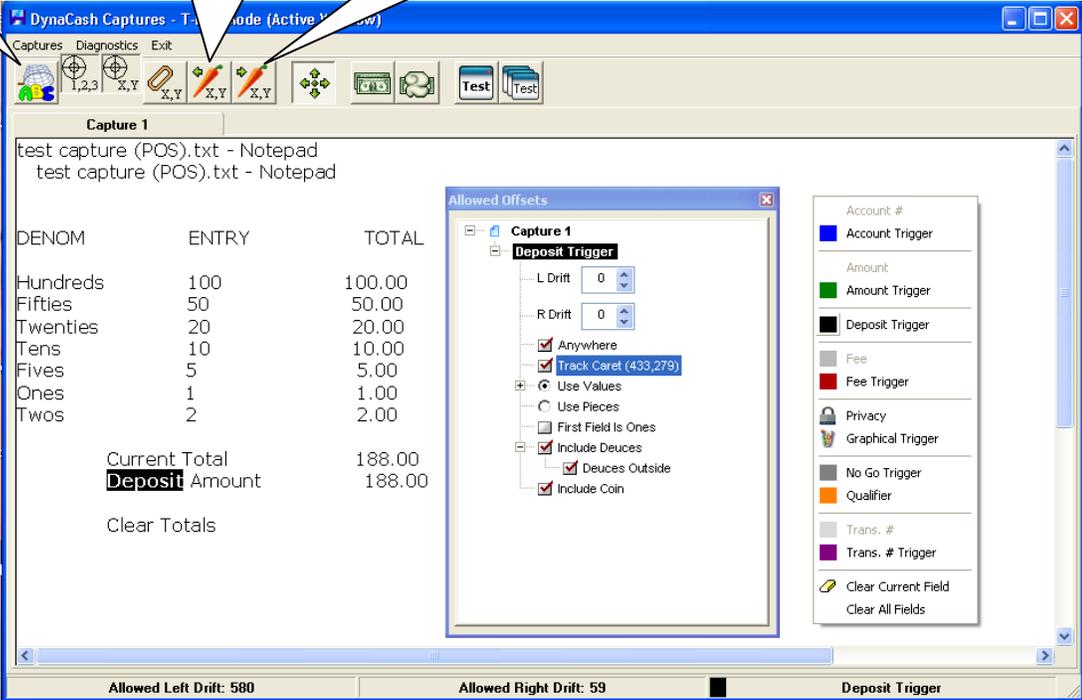
1. Start DynaSetup, then click “Captures” to open the DynaCash Captures screen.
2. Select a Deposit (or Back Fill) capture and make sure the desired “Track Caret” checkbox is checked for either Deposit or the Back Fill Caret capture under Format settings.
3. Click the appropriate Entry Caret Capture button  to minimize the Captures window.
4. Make sure the Teller App “cursor” position in the Deposit window is at the exact position in the first field where denominational entries are to be made.
5. Press the Deposit or Back Fill Caret position button to minimize the capture setup screen and capture the caret position.

## Example of Caret Position Capture Options

Capture Buttons

Click this button to enable Caret Capture Mode for Depositing

Click this button to enable Caret Capture Mode for Back Fill



DENOM	ENTRY	TOTAL
Hundreds	100	100.00
Fifties	50	50.00
Twenties	20	20.00
Tens	10	10.00
Fives	5	5.00
Ones	1	1.00
Twos	2	2.00
Current Total		188.00
<b>Deposit</b> Amount		188.00
Clear Totals		

# Deposit Example

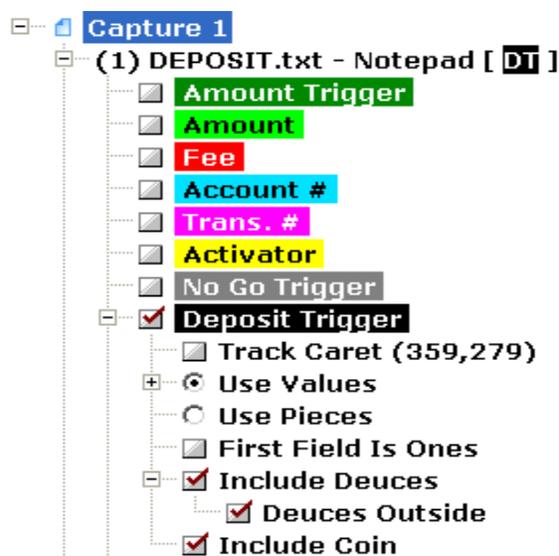
We observe the following in this example of a typical Deposit window:

- In this application the user makes entries into the denomination fields as dollar values
- The user has to type a “.00” after each dollar amount that is entered
- The application includes Deuces
- Deuces are “Outside” (Not between the \$1 and \$5 denominations)
- A single ENTER accepts the denomination and moves to the next denomination
- A single ENTER accepts the One’s and moves to the Deuces
- A single ENTER accepts the Deuces and moves to the Coin field
- The cursor positions itself in the \$100’s field when the window is opened

Upon evaluating the window we make the following settings in DynaSetup:

- The window caption “DEPOSIT” is set as the DEPOSIT TRIGGER
- The captured Caret Position is at (359, 279)

## Format Settings



## Bills Tab

Capture 1			
Action	Shifted	Keystroke	Count
Prefix 1	None	None	1
Prefix 2	None	None	1
Prefix 3	None	None	1
Prefix 4	None	None	1
Prefix 5	None	None	1
Interfield 1	None	{ENTER}	1
Interfield 2	None	None	1
Interfield 3	None	None	1
Interfield 4	None	None	1
Interfield 5	None	None	1
Suffix 1	None	{ENTER}	1
Suffix 2	None	None	1
Suffix 3	None	None	1
Suffix 4	None	None	1
Suffix 5	None	None	1

Interfield action “ENTER” accepts count and moves to next denomination

Suffix action “ENTER” accepts last denomination and moves to Deuces field

## Deuces/Coin Tab

Action	Shifted	Keystroke	Count
\$2's Suffix 1	None	{ENTER}	1
\$2's Suffix 2	None	None	1
\$2's Suffix 3	None	None	1
\$2's Suffix 4	None	None	1
\$2's Suffix 5	None	None	
Coin Suffix 1	None	{ENTER}	
Coin Suffix 2	None	None	
Coin Suffix 3	None	None	
Coin Suffix 4	None	None	
Coin Suffix 5	None	None	1

The Counts from the Recycler are:

\$100 = 700  
 \$50 = 0  
 \$20 = 4080  
 \$10 = 0  
 \$5 = 125  
 \$1 = 376  
 \$2 = 4  
 Coin = 1.45

Window Caption "DEPOSIT" is detected when the Deposit hotkey is pressed. This allows the deposit process to start.

The caret positions itself in the \$100's field (111,58) when the window is opened. DynaCash checks the position of the caret when the hotkey is pressed. It was correct so Deposit can proceed. The user is prompted through the counting process by Guide Messages. For our example, we'll use the counts shown at left.

DynaCash types in 700 then adds ".00" as directed in the format setting "Values Append ".00"

DynaCash then types the Interfield Action ENTER to accept the count and move to the next denom field.

DynaCash types a 0 because there were no \$50's. It then adds ".00" as directed with Values Append ".00"

DynaCash then types the Interfield Action ENTER to accept the count and move to the next denom field.

The \$20, \$10, and \$5 denoms are filled in the same way.

DynaCash types in 376 then adds ".00" as directed in the format setting "Values Append ".00"

DynaCash does not use the Interfield Action to accept the count for the last regular field. Instead it uses the Suffix Action to accept the count. In this case the Suffix Action is used to accept the count and move to the \$2's field because "Deuces Outside" is checked.

DynaCash types in 4 then adds ".00" as directed in the format setting "Values Append ".00"

DynaCash then types the \$2's Suffix Action ENTER to accept the count and move to the coin position.

DynaCash then types the Coin Suffix Action ENTER to include the coin count into the teller application.

Example Application Window

DEPOSIT	
\$100	700.00
\$50	0.00
\$20	4080.00
\$10	0.00
\$5	125.00
\$1	376.00
\$2	4.00
COIN	1.45

# Saving Settings

Nothing needs to be done to save the settings you've made in DynaSetup. Simply close the captures screen when finished, then close the DynaCash Setup screen. Everything is saved as soon as the settings are made.

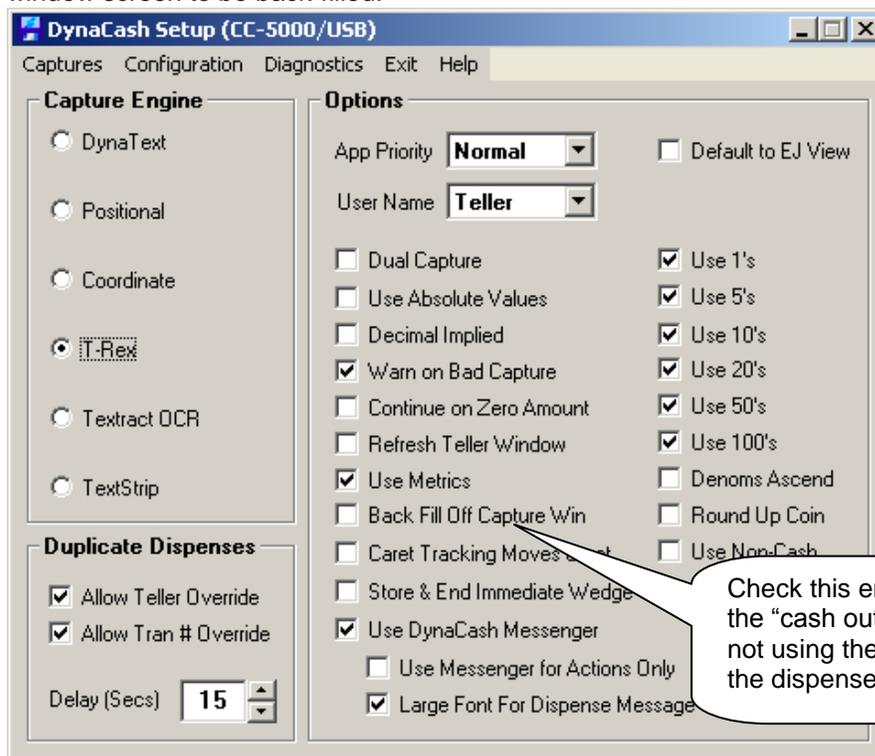
## Dispensing with Backfill

### Configuring Dispensing with Backfill Overview

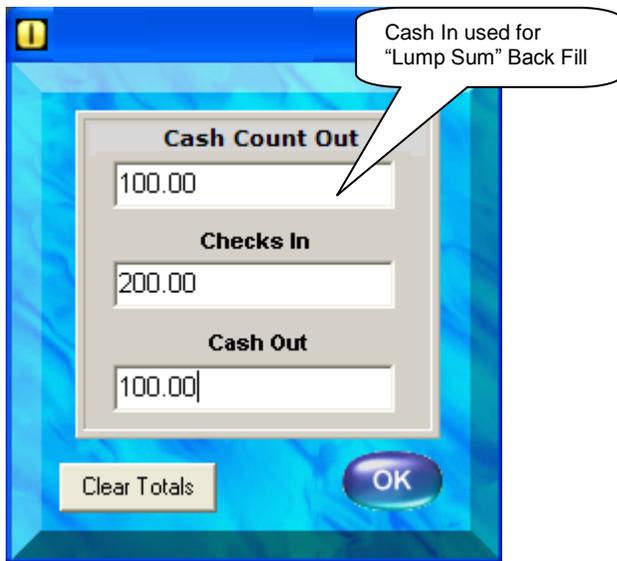
When the Dispense Hotkey is pressed, DynaCash examines the current active window to determine if a valid Dispense Trigger is present. This serves to identify the window as a valid screen which can accept a currency input. If configured, Caret Tracking can further determine if the cursor is properly positioned in the correct field to begin wedging the dollar amounts. After prompting the user to process the currency through the recycler, DynaCash then takes the counted notes and mimics the keystrokes which an operator would use to enter those amounts manually into a Cash Count screen. This is usually done in less than a second and without the possibility of errors which can occur if manually keying in these amounts. Following is an overview of the process used to set up the Dispense Triggers and Backfill formatting in DynaSetup.

### Back Fill Off Capture Win (DynaSetup Configuration)

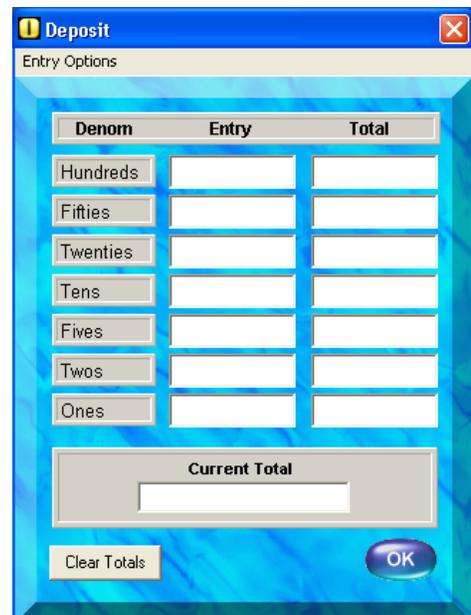
In some teller applications a window onto which a dispensed amount backfill must be directed may not be the same window from which the dispense capture was hot-keyed. This entry causes DynaCash to hold the Back-Fill values in memory until a secondary window (other than the dispense capture window) is activated by the teller and becomes visible. At that time, DynaCash will Back-Fill (wedge) the counted note values directly into the new window. If a secondary "cash count-in" window is required, you must check the **Back Fill Off Cap Win** setting in DynaSetup, before proceeding to setting up the configuration and screen capture information for the second window screen to be back-filled.



1. **Identify Dispense screens** – Any window which contains a “Cash Count-Out” field to enter currency received from a customer is potentially a Back Fill screen. This could be any window where manual entries must be made for Dispensed cash or where other cash entries are manually keyed in (such as cash drawer balancing).
2. **Capture the Dispense Screens** – Refer to the previous sections which cover the different capture methods for more details on choosing a Capture Method and the actual method for doing the captures.
3. **Mark a Dispense Trigger** – Again, refer to the previous sections which explain how the screen marking is done for the different Capture Methods.
4. **Collect Info about the Application** – You’ll need to know where the cursor should be when the teller begins to make their entries. You’ll also need to know how the entries are made in the application so the Format and Keystroke selections in DynaSetup can be made properly. For instance, you’ll need to know if the user has to enter the currency as a lump sum or by denomination. If entering by denomination, is the entry made by the number of bills or by the dollar value? Does the user have to follow a dollar value with “.00”? What keystrokes are necessary to accept the entry and move to the next field? Where are the 2’s entered? Where should the caret come to rest?
5. **Make Necessary Format & Keystroke Entries in DynaSetup** – Different Capture Methods use slightly different methods in DynaSetup to properly format the Dispense to enter properly. These are covered in more detail in the following sections.
6. **Capture the Caret Position** – DynaCash contains a Caret Tracking feature that tests for the Caret Position before the entries are sent to ensure that the Entry Caret is in the first denominational field. If Caret Tracking is going to be used then a second Caret Position capture of the Dispense screen is made after ensuring that the Caret is in the correct position.
7. **Test the Dispense** – DynaSetup can test that the Dispense Trigger is found, but it is also necessary to test with DynaCash to see that the values are entered in the actual application correctly.



Example: Dispense Amount Window with Lump Sum Backfill in same window



Example: If the Teller app has a secondary window (not the same as dispense window) for wedging counted notes, that requires **Back Fill Cap Off Win** setting checked in DynaSetup.

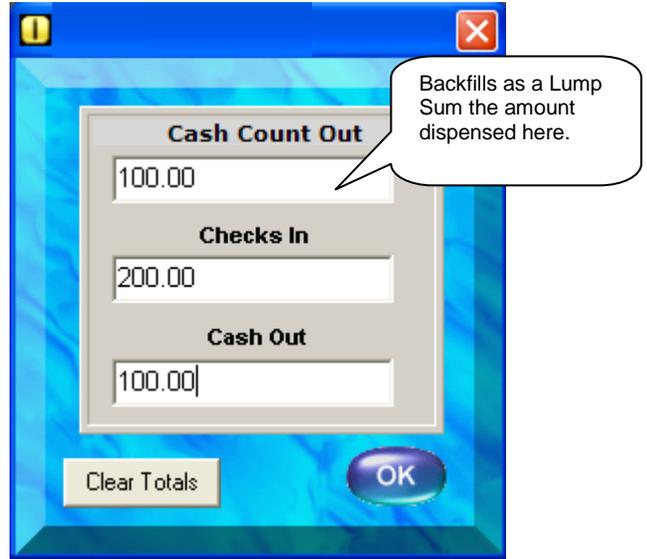
## Back Fill Capture Engine Overview

## Positional Methods – Positional and Coordinate

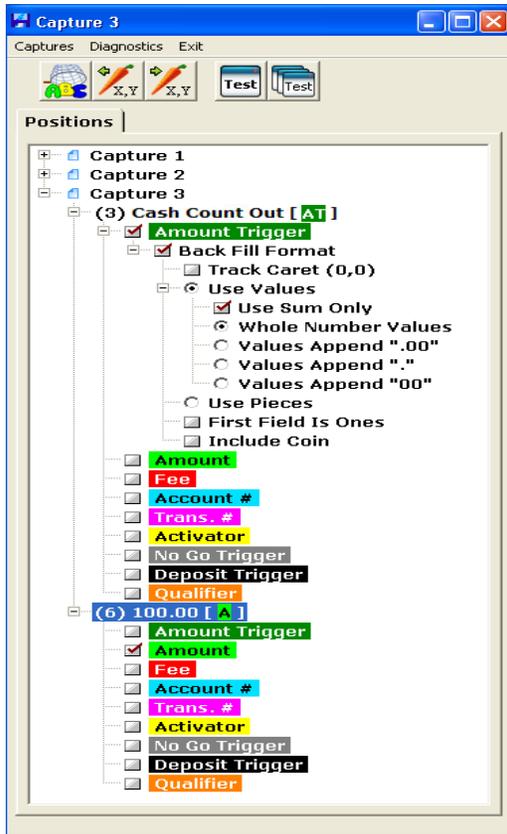
**Positional Mode** uses the numeric positions that are returned by the Windows operating system to identify the fields in an application. In many apps the numeric positions of the fields stay fixed and can be used to distinguish a field that identifies the current active window, or a field that has the amount to be dispensed.

Positional Mode is often a good starting point when trying to determine what Capture Engine to use for a customer's application. It is also the default Capture Engine that is set when Generic DynaCash is installed. Positional and Coordinate modes are built into DynaCash and don't require any additional support program to be installed.

**Coordinate Mode** adds methods to determine a physical position on the screen where the field is located. Coordinate mode is specifically aimed at applications that have positions returned by the Windows operating system that change under certain circumstances. As long as the physical position on the screen is not changing, Coordinate mode still reads from the correct field.



Example: Dispense Window showing "Lump Sum" Cash Count Out as wedging into same window the Cash Out is dispensed from.



Positional/Coordinate Mode Setup

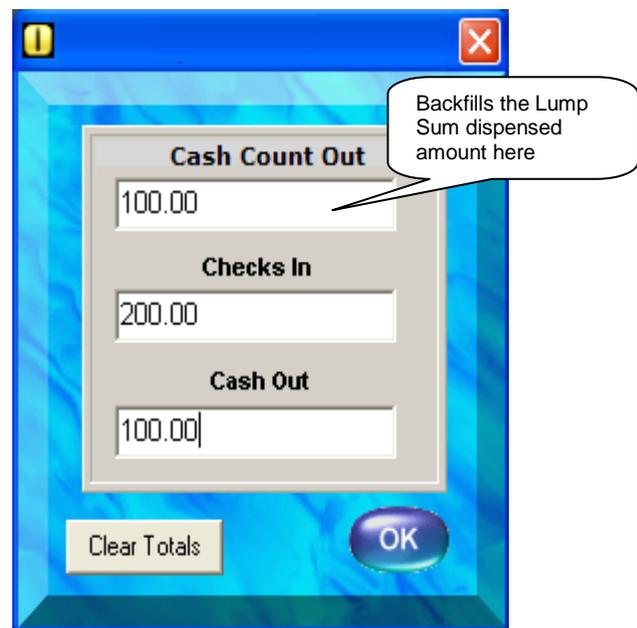
## String Capture Methods – T-Rex & Textract

The String Capture method uses various methods to examine the application window and return a “String” of text. Out of that text we can scan for triggers that indicate a cash out/dispensed amount. We use the DynaSetup utility to mark the trigger words and amounts that will be needed by DynaCash. The String Capture methods are portable from computer to computer. String Capture is the first resource to try if any of these circumstances exist:

- The customer’s app is DOS, running in a window under Windows XP
- The customer’s app is running in a terminal emulation window (no GUI objects in the app itself, just a DOS-looking main window that may have a terminal emulator toolbar and status panel at the bottom).
- The customer’s app is GUI, but the trial text captures done in Positional mode didn’t retrieve the text needed for dispense triggers and/or the dispense value itself. This failure can be due to the required text being contained in a list box (rather than a single line entry box) or because the app uses certain objects to contain the text which require much more complex capture techniques than our native Positional mode.

**T-Rex String Capture** is built into DynaCash and Does not require any additional support files to be installed. This is the first choice when using a String Capture method.

**Textract OCR String Capture** is generally the last choice due to the fact that it is expensive, and there can be registration issues that the manufacturer doesn’t address on a timely basis. Sometimes, though, it is the method that works best and it is necessary to use it.



Example: Setup configuration for Dispense Amount Back Fill values into the same window using T-Rex Capture Method:

The screenshot shows the DynaCash Captures - T-Rex Mode (Active Window) interface. The main window displays a transaction screen with the following data:

Cash Out	\$12,345,678.90
Account Number	XX XXXXXXXXXX
Effective Date	12/16/2008
Check	1
Bills:	100's \$11,100,000
Check Amount	\$12,3
SSN	20's \$1,000,000
Dispo 10's	2's \$240,000
Transfer To Account	5's \$5,000
ForwCoins	1's \$600
	2's \$0.00
	1's \$78
	\$0.89
Total Cash Out	\$12,345,678.89
Amount To Forward	\$0.01

The Allowed Offsets configuration window is open, showing the following settings:

- Capture 1
- Capture 2
- Amount
- Amount Trigger
- L Drift: 0
- R Drift: 0
- Anywhere:
- Back Fill Format:
- Track Caret (0,0):
- Use Values: 
  - Use Sum Only:
  - Whole Number Values:
  - Values Append ".00":
  - Values Append ".":
  - Values Append "00":
- Use Pieces:
- First Field Is Ones:
- Include Coin:

Annotations:

- Click to Open Allowed Offset to setup the required Back Fill Conditions
- Setup Cash-Out Count to "wedge" dispensed Whole Number Values using the Amount Trigger under Allowed Offsets.
- Back Fill Configuration for this sample screen

The screenshot shows the actual Teller App window for this sample configuration. The window displays the following data:

Cash Out	\$12,345,678.90
Pay	\$0.01
Effective Date	12/16/2008
Cash Out	\$12,345,678.90

The Bills and Coins section is also visible:

Bills:	100's	\$11,100,000
	50's	\$1,000,000
	20's	\$240,000
	10's	\$5,000
	5's	\$600
	2's	
	1's	\$78
Coins		\$0.89
Total Cash Out		\$12,345,678.89
Amount To Forward		\$0.01

Annotation:

- Actual Teller App window for this sample configuration

Add-On Technologies, Inc.

# DynaCash™ CC-5000 Profiler

## Installation and Setup for Dispensers & Recyclers



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# CC-5000 Profiler Notes

## System Overview

The CC-5000 is the next generation controller terminal, central to the Add-On Technologies DynaCash dispenser and recycler interfaces. It adds new connectivity such as direct plug 'n play USB to the host PC's, Ethernet, and extra serial ports for control of coin dispensers when used with bill recyclers. Ethernet connectivity will move the system towards true electronic journal capability as well as the capability to view inventory levels remotely.

Whereas the legacy CC-1000 based systems used EEPROM for program storage (64K bytes) and relied solely on battery-backed RAM (32K bytes) for "permanent" storage, the CC-5000 uses a flash file system to store a "profile" containing flags, values and phrases that determine how the system behaves. The CC-5000 is typically profiled prior to site installation but can be profiled for changes at a later date. The **Profiler** is built into the DynaSetup (DynaCash Setup) utility. It is accessed via a hidden popup menu, only if the menu is displayed by a proper setting in the DynaCash.ini control file. The profiler requires a password entry to log in. The password files are encrypted with 128 bit AES standards. Since the Profiler is installed with DynaCash on each customer PC, a technician replacing a CC-5000 doesn't require a laptop PC to profile the unit to the site's standards – it can be done directly from the already attached customer PC.

The profile contains all of the system options that aren't likely to be changed during the life of the interface. For instance, a printer type such as Star thermal or Citizen's IDP-3550 may be selected in the profiler. CC-5000 report formats may be chosen. Security options can be selected, such as lockout (disabling) of the CC-5000 Vault Buy key or Withdrawal key.

A few of the options available in the Profiler are also available to management via CC-5000 input through hidden prompts. These are the more common options that may need to be changed by the end user during the life of the interface. Such options include enabling/disabling coin dispensing and setting an Administrator's password. There is also a provision in the CC-5000 for the end user's IT staff to change LAN settings.

Profiles may be saved as files that can be archived and used to set up other sites for a customer later. The profiler can upload the file to the CC-5000 over the Side 1 USB link to DynaSetup, or over LAN.

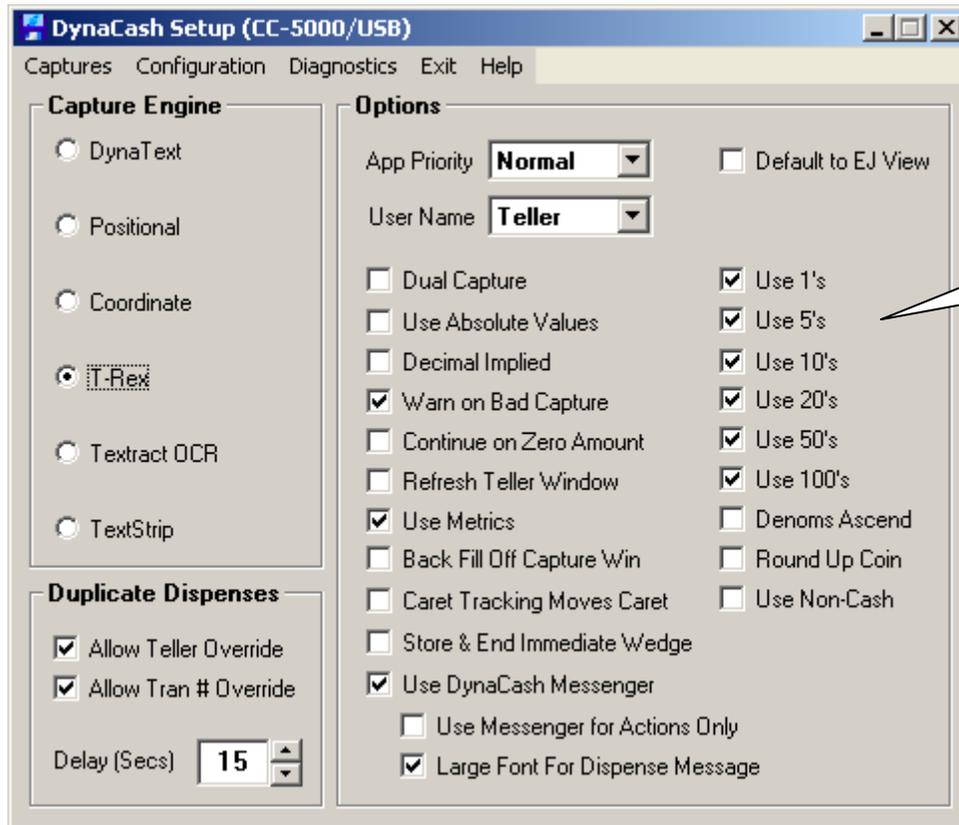
The CC-5000 program is also stored in the flash file system. Firmware updates for the CC-5000 can be uploaded via LAN using a special program loader utility called the **Update Manager** (not included in a typical DynaCash install). Unlike the legacy CC-1000 system, the CC-5000 can be reprogrammed without taking the cover off.

The CC-5000 allows Vault Buys and Vault Sells through the keypad. It also can be used with DynaCash in either a "Standalone" (no teller app) mode or an "Online" (teller app) mode. This option can be selected at installation time or afterwards by using the DynaSetup utility. One product part number covers both Standalone and Online variations.

When used with a teller app, the DynaCash Online Deposit feature uses our well-proven and reliable TellerCounts technology. The DynaCash capture databases for each teller app used with the recyclers will contain the deposit setup criteria, and will be deployed on CD in our teller apps list as "pre-canned" setups, the same method we now use for cash dispenser capture databases. Whereas DynaCash dispenses are based on an "Amount Trigger", DynaCash initiates the Deposit process when a PC hotkey is pressed while a "Deposit Trigger" such as "Cash In" is showing on the active teller app window.

# Using the Profiler

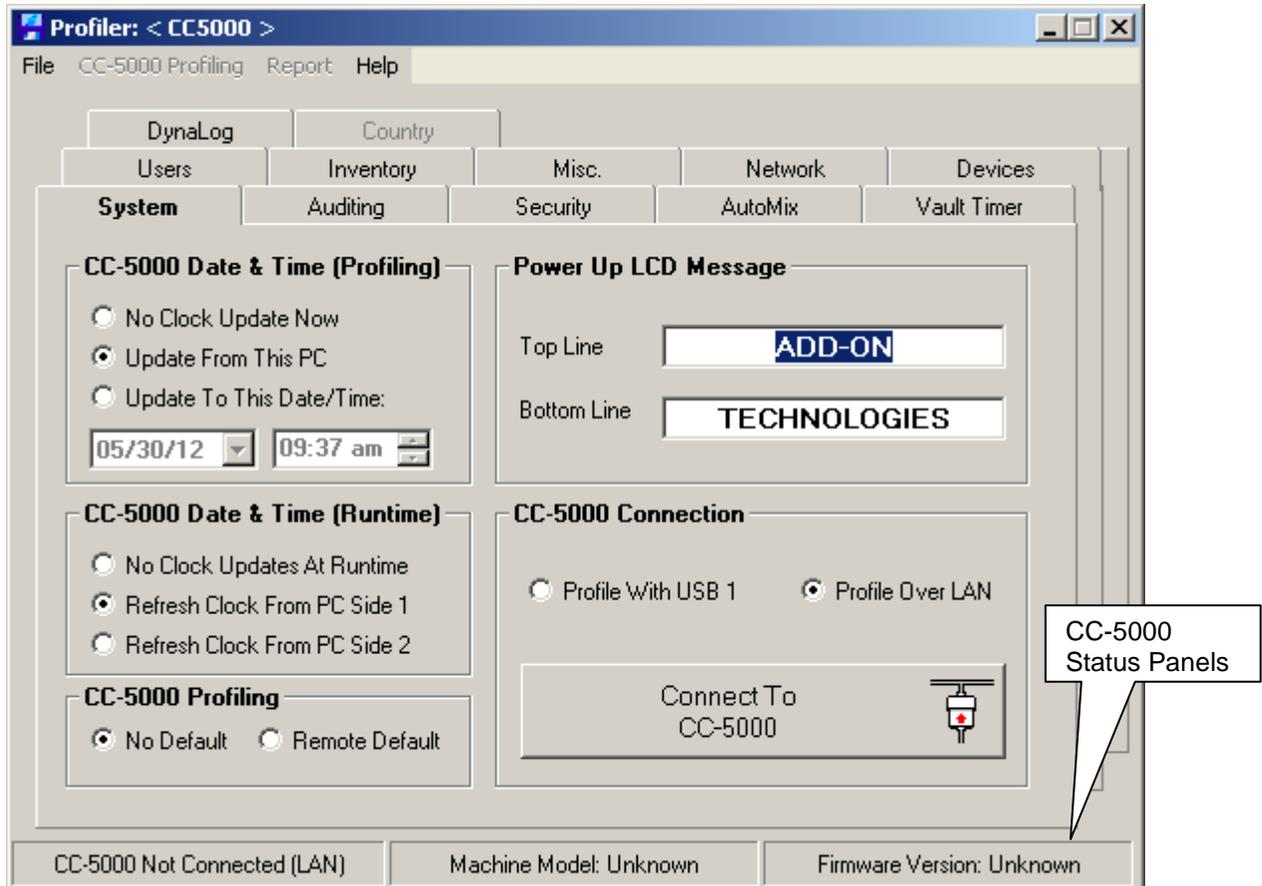
1. Launch the DynaSetup utility from the Start/Programs DynaCash group. If "Password Protect DynaSetup" was checked at installation time, you will be required to enter the admin password. The main window is shown here:



2. Place the mouse cursor over any empty area of the window and right click the mouse. A popup menu showing "Profile CC-5000" should appear next to the mouse cursor. Click the popup menu. A password entry dialog should appear. Enter either the Default or Admin passwords and press Enter.



# System Tab



This is where you determine the profiling method (USB Side 1 or LAN) to achieve the connection with the CC-5000 to be profiled (if you're not just creating a profile file for later use, or viewing a profile that had been saved earlier).

**CC-5000 Connection** – Choose either a LAN connection or to use the USB Side 1 (Side A) CC-5000 port to upload the profile. The button allows you to establish the connection or to disconnect from the CC-5000 (once connected). To ready the CC-5000 for connection, hold the CC-5000 “Yes/(+)” key while applying power. After the program loads and the initial LCD message has displayed, press the “Yes” key at the **PROFILE SYSTEM?** prompt. The CC-5000 will then display **AWAITING PROFILE – PRESS C KEY TO CANCEL**. You can now click on the Profiler’s **Connect To CC-5000** button. Within a few seconds, that button should be relabeled **Disconnect CC-5000** and the bottom status panels should display the **Ready For Profile** status with machine type and CC-5000 firmware version. The system is now ready to accept the commands on the **CC-5000 Profiling** menu. Refer to the **Uploading to the CC-5000** section of this document for details regarding that menu item.

**CC-5000 Date & Time (Profiling)** – These options let you synchronize the CC-5000 real time clock with the date and time from the profiling PC. You can choose not to update the CC-5000 clock, or update it to the current profiling PC’s date and time, or set it to a specific date and time. Using this feature lets you avoid having to set the date and time through the CC-5000 Menu key.

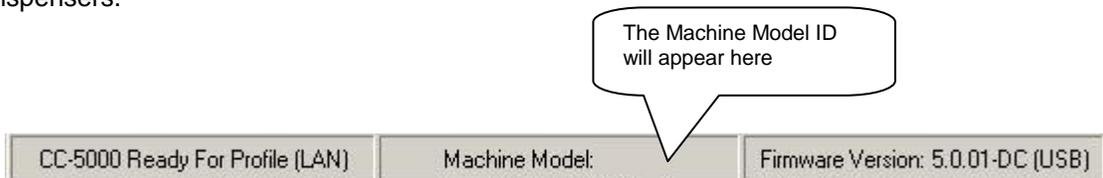
**CC-5000 Date & Time (Runtime)** – These options cause the CC-5000 real time clock to be synchronized with the date and time from either of the two connected teller PC’s, whenever DynaCash is first launched at the selected PC each day. You can choose not to refresh the CC-5000 clock, or to have it refresh from one or the other of the teller PC’s. Using this feature lets you avoid having to change the time through the CC-5000 Menu key, when Daylight Savings Time changes occur. Since PC’s can handle Daylight Savings Time changes automatically (if they are

enabled to do so), having the CC-5000 resynchronize its clock to the PC every day lets the CC-5000 adjust for the time change as well. **SECURITY NOTE – if using the Vault Timer feature, it may be desirable to disable runtime clock updates, particularly if tellers can change dates and times for their PC's.**

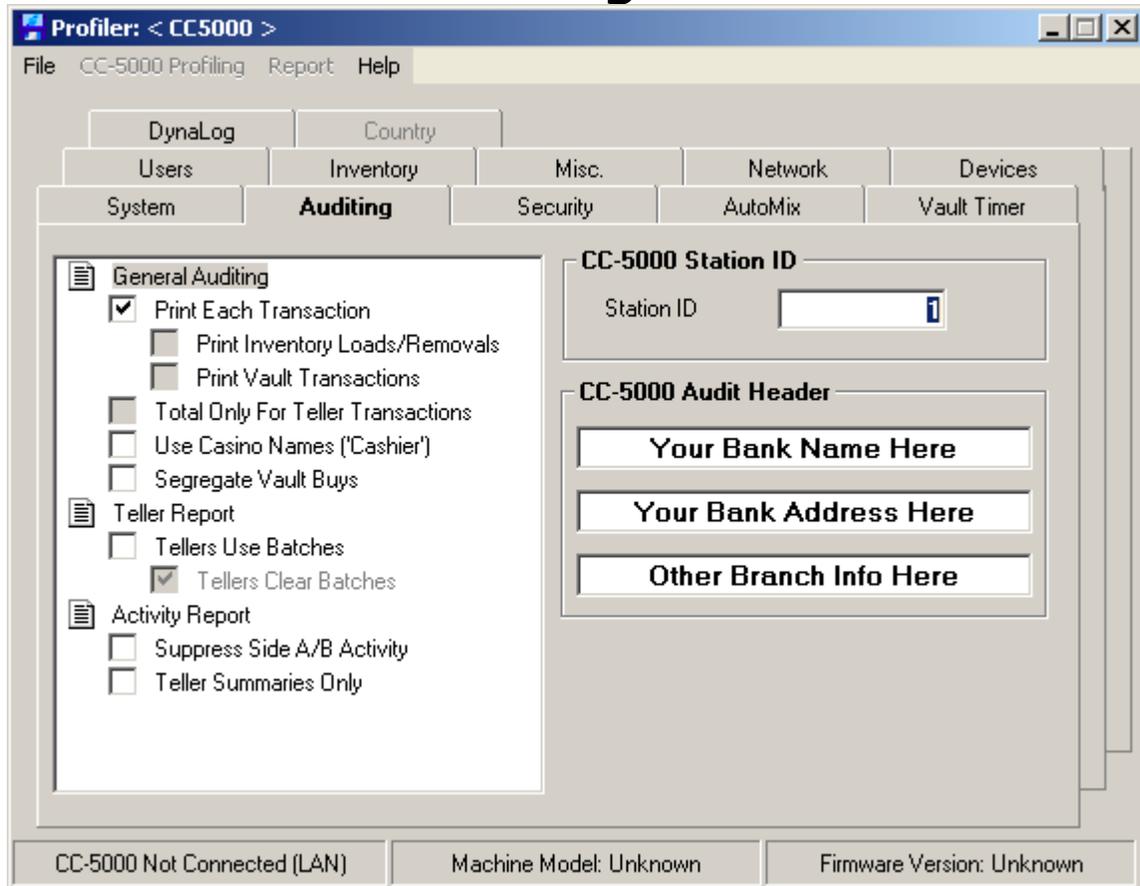
*CC-5000 Profiling* – [Default setting is NO DEFAULT] This section lets you choose to remotely default the CC-5000 when the profile is sent. Defaulting will clear all user totals, transaction activity totals, transaction history, and user numbers and user PIN numbers. Recycler inventory totals are not cleared at default time but bill dispenser cassette totals **do** automatically get cleared in the default process. Note – a new user list can be created in the Profiler and sent to the CC-5000 along with the profile. Having the Remote Default option selected in this case does not affect the new users – they will be uploaded to the CC-5000 in either case. It is important to note that the new user list will replace the existing users (and their totals) in the CC-5000.

*Power Up LCD Message* – This lets you type in up to 24 characters for each of the CC-5000 LCD lines, as a custom message that shows when the CC-5000 powers up. All characters should be in capital letters to look correct on the LCD.

*Status Panels* – The panels at the bottom of the Profiler window show whether the CC-5000 is connected to the Profiler, how it is connected (USB vs. LAN), the model of machine the CC-5000 is programmed for, and the CC-5000 firmware version. This information is updated as soon as the Profiler connects to the CC-5000. Certain options in the Profiler become enabled or disabled, depending on the machine type and firmware version detected. For instance, cassette inventory entries (coming from the Profiler as the initial inventory load) are only available for cash dispensers.



# Auditing Tab



– This tab contains options related to how the CC-5000 reports print, which printer to use, and other assorted print-related features:

*Prints Each Transaction* – If this box is checked, the CC-5000 will print details of each new transaction to the audit tape when the transaction finishes. This includes dispenses, vault sells, vault buys, inventory loads, inventory removals, online deposits, and divert bin reconciliation. Selecting printing suppressed (box is unchecked), is preferred at some sites. The history data for these transactions is always available for printing later, if an actual hardcopy of the transactions is required for audit purposes. Transactions that “go bad” such as a partial dispense or failed dispense due to a machine error do get printed, regardless of this Profiler setting. For most users, this box would be checked.

*Print Inventory Loads/Removals* – Currently unavailable pending future release.

*Print Vault Transactions* – Currently unavailable pending future release.

*Total Only For Teller Transactions* – Currently unavailable pending future release.

*Use Casino Names ('Cashier')* – If checked, this replaces the word “Teller” in all CC-5000 displayed messages and printed reports with the word “Cashier”. For CC-5000’s used with a bill recycler, it also affects how cashier deposit limits do their math (as opposed to how those limits are used in a banking environment).

*Segregate Vault Buys* – If this box is checked, it enables the CC-5000 to keep Vault Buy totals separate from the Side A and Side B dispensed totals (it creates a separate Vault Buys section on the Activity Report). Also, each teller section printed in the Activity Report will include a Vault Buy total for that teller. The Teller Report will include a Vault Buy section. The Menu key will show an additional Extended Menu prompt, “**VAULT BUY REPORT? Y/N**”. Responding “Yes” to this

prompt will print Vault Buy transaction history for the tellers (back to the last time Activity was cleared) in order of teller # and transaction #.

*Tellers Use Batches* – Teller Batching would be enabled if management wants regular balancing between the dispenser or recycler and the teller app to occur at regular intervals throughout the day (buy or sell ticket creation). When batching, a separate set of “batch totals” for each teller is maintained. The batch totals for a teller can be cleared after a Teller Batch Report is printed from the CC-5000 Teller Report key (authority to clear batches is controlled by the *Tellers Can Clear Batches* option described below). Since batch totals can be cleared at any time, Teller batch totals are completely independent from the teller grand totals printed by management in the Activity Report. They are primarily used to create a buy/sell transaction for the teller app, based on the accumulated batch total (net batch total for recyclers) shown in the Teller Report since the last batch clearing.

An example of batch usage is if several tellers do vault buys at the beginning of the day, and they won't use the dispenser after that. They could each print (and clear) their batch after the vault buy, and immediately use the batch report totals to create a “buy” transaction in the teller app. The balancing task in this case gets accomplished immediately after the vault buys, and there is no concern about tellers remembering to do the buy at day end. **NOTE – we feel that having batching disabled keeps things simpler in the long run. There are no problems with tellers forgetting to clear their batch after printing the report that way.**

*Tellers Clear Batches* – Used with the Teller Batching option. If checked, tellers get a prompt to clear the batch after printing their report. If unchecked, it requires a manager to clear the teller batches. Generally, tellers are allowed to clear their own batches.

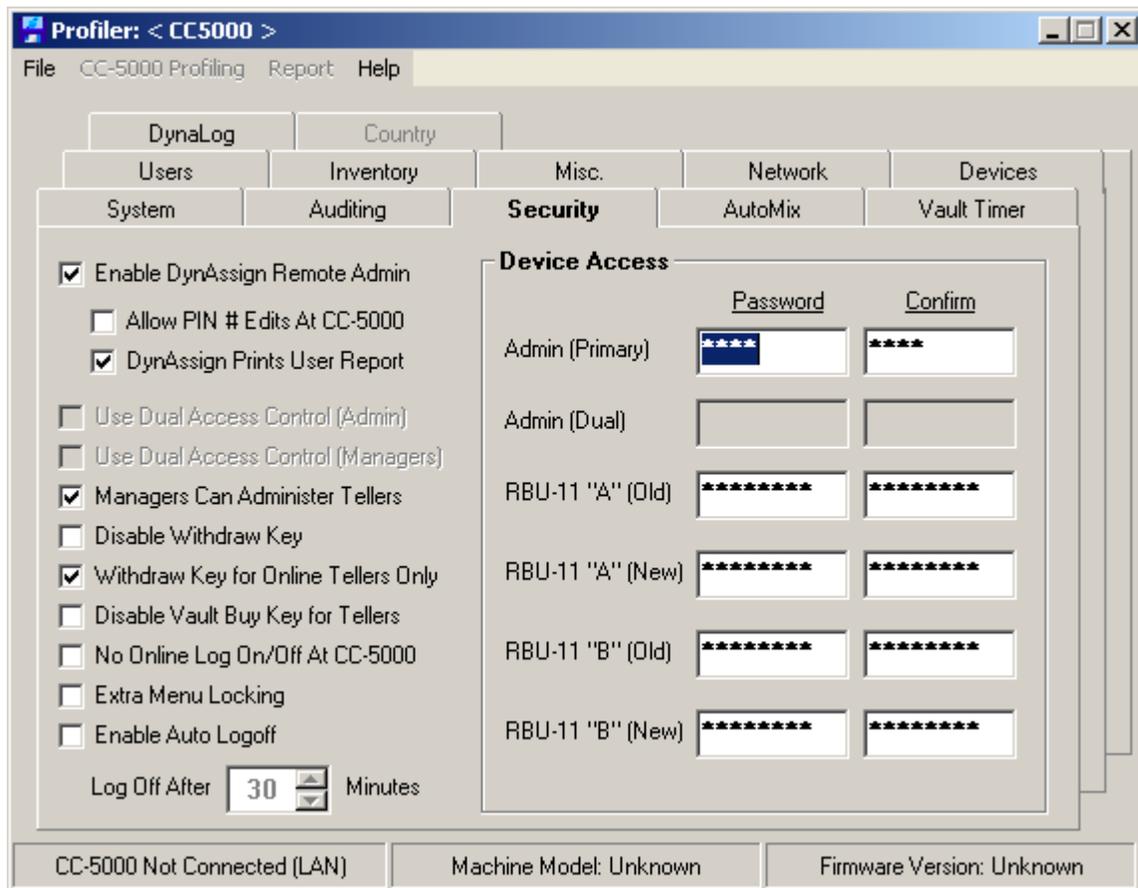
*Suppress Side A/B Activity* – Check this box to make the manager's Activity Report shorter. If the box is left unchecked, activity by denomination is reported for side A and B as well as a grand total activity. For bill recyclers, Activity also normally includes deposit totals for side A and B. Suppressing it removes the A and B dispenses by denomination section and the A/B deposits by denomination section. There will still be a machine totals (by denomination) section for dispenses and deposits.

*Teller Summaries Only* – This option can make the manager's Activity report much shorter, particularly if there are many tellers. Checking it causes the CC-5000 Activity Report to skip printing denominational totals for each teller – instead, a lump sum dispense total and lump sum deposit total (if recycler) are reported.

*CC-5000 Station ID* – The Station ID is mandatory and can be up to 8 digits long. This Station ID is used in reporting and printing a record of transactions. The CC-5000 serial number (found on the bottom panel of the CC-5000) may be used as the ID, or the serial number of the bill dispenser or recycler.

*CC-5000 Audit Header* – Up to 3 lines of printed information specific to the end-user site can be entered here (up to 40 characters per line). This could be a bank name and address, a branch number, a serial number or machine number for the connected dispenser or recycler, or any other useful information. The header is printed to the audit tape by the CC-5000, every time CC-5000 power is cycled on.

# Security Tab



This tab contains options for managing CC-5000 security, such as timed automatic logoff of users, password assignment, and disabling dispensing at the CC-5000:

*Enable DynAssign Remote Admin* – For use with DynAssign teller management application. This allows DynAssign to remotely manage Tellers and Managers on the CC-5000. With this enabled, normal teller administration is disabled and must be done using DynAssign.

*Allow PIN # Edits At CC-5000* – This allows management of Teller and Manager Pin numbers to be changed through the Vault Buy key. Teller and Managers can only be added or removed through the DynAssign application. If unchecked, all Teller and Manager administration is disabled at the CC-5000.

*DynAssign Prints User Report* – After Teller and Manager Administration through DynAssign, the CC-5000 will print a report of changes made through DynAssign.

*Use Dual Access Control (Admin)* – Currently unavailable pending future release.

*Use Dual Access Control (Manager)* – Currently unavailable pending future release.

*Managers Admin Tellers* – This controls whether or not “standard” managers can add, delete, or edit tellers in the CC-5000 teller list. If checked (the most often used setting) any manager may administer the teller list. If unchecked, access to the teller list will require either the default password (used by the dispenser/recycler OEM or dealer only) or the branch manager’s Admin password (both are the highest level passwords).

*Disable Withdraw Key* – The CC-5000 Mixed Amount Withdraw key is disabled. Tellers won't be able to do emergency automix dispenses from the CC-5000 keypad. The Withdrawal key would normally be enabled for most sites.

*Withdraw Key for Online Tellers Only* – Checking this box lets the CC-5000 Withdraw key be used only by the logged on tellers for Side A or Side B. Leaving the box unchecked will let other tellers do automixed dispenses with the Withdraw key, just like they would use the Vault Buy key.

*Disable Vault Buy Key for Tellers* – The CC-5000 Vault Buy key becomes disabled for teller use. It can still be used by managers for Inventory Removal (bill recyclers only), but is a "dead" key when no manager is signed on. The Vault Buy key is normally enabled at most sites.

*No Online Log On/Off at CC-5000* – Disables Logging on or off at the CC-5000. Logging on and off can only be done through DynaCash.

*Extra Menu Locking* – If enabled, this forces the manager accessing the CC-5000 Menu key administrative functions to enter the default or branch manager Admin Password at a certain place in the Menu key prompt loop. This adds extra security by forcing use of the password to change date or time or to access Vault Timer setup, all of which could be modified to allow off-hours dispensing. This feature is normally not used.

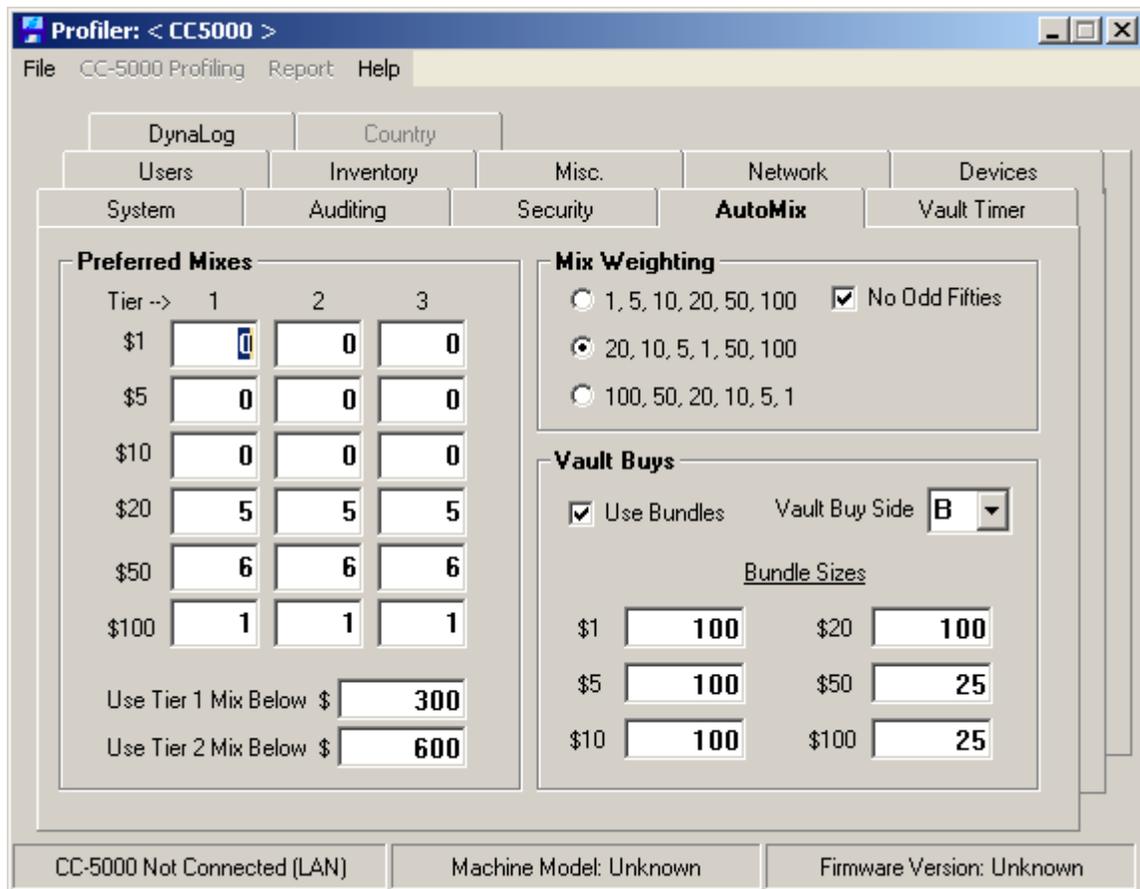
*Enable Auto Logoff* – Enabling Auto Logoff causes the CC-5000 to monitor how much time has elapsed since any of the users has done a transaction. The time delay is entered in the "Log Off After" spin box. If a particular user hasn't done a transaction (or for managers, if they haven't made a keypad entry) in that time period, they will be automatically logged off of the system.

*Admin (Primary) Password & Confirm* – These entries are for the Branch Manager password, which has the same "highest access level" as the Default Password. This is not a mandatory entry. Management using the CC-5000 can enter the password later.

*Admin (Dual) Password & Confirm* – Currently unavailable pending future release.

*Recycler Side A & B Passwords* – (Recycler only) By default, the Side A and B passwords for both old and new are set to the Recycler default passwords. If a new password needs to be set, it is entered into the "New" box for Side A and/or B. The CC-5000 is profiled with the new password. When the CC-5000 attempts to send a command to the Recycler, it is verified that the "Old" password is correct before the password is changed in the Recycler to the new password that was entered.

# AutoMix Tab



– This tab contains all of the AutoMix settings and Vault Buy batch size options:

**Preferred Mixes Section: Tier Quantities & Cutoffs** – Three concurrent AutoMix strategies can be used. The Tier 1 column has the preferred mix settings (pieces) for dispense amounts from \$.01 up to the entered Tier 1 Mix Cutoff value (“Use Tier 1 Mix Below” entry). The Tier 2 mix settings kick in when the amount is greater than or equal to the Tier 1 cutoff but is lower than the Tier 2 cutoff (“Use Tier 2 Mix Below” entry). The Tier 3 mix preferences are used when the amount is greater than or equal to the Tier 2 cutoff value. Management, through the CC-5000 keyboard, can also change all the settings in the Preferred Mixes section later.

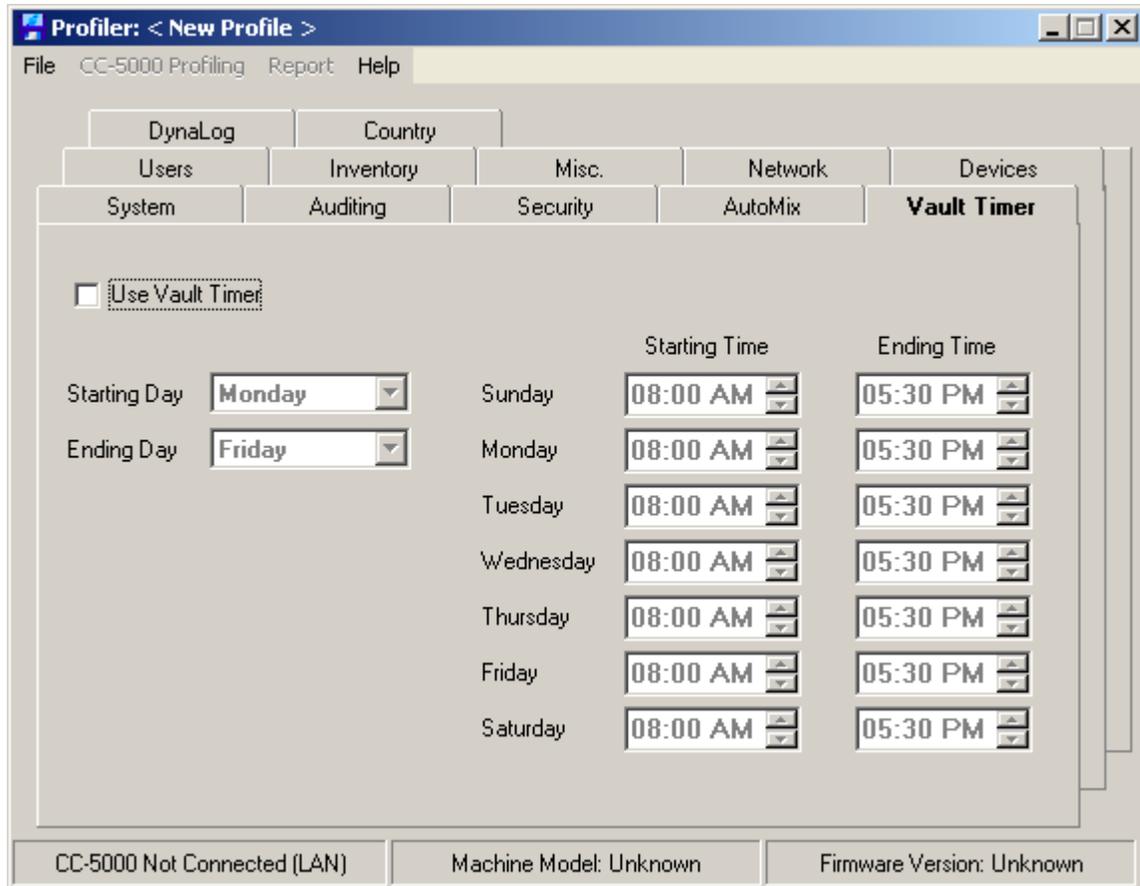
**Mix Weighting** – This sets the denominational order in which the preferred mix settings get applied. For instance 1, 5, 10, 20, 50, 100 is what we call “Low To High” and seems to be favored in New England. Dispenses will use the \$1 mix amount first, then the \$5, \$10, etc. in that order until the dispense request is fulfilled. The default weighting is 20, 10, 5, 1, 50, and 100 which will always try to fulfill the \$20 mix quantity first, followed by the \$10, and so on.

**No Odd Fifties** – If checked, the CC-5000 will never dispense an odd number of \$50 bills, unless the automix tier being used at the moment has an odd number for the \$50 entry.

**Vault Buys Section: Use Bundles & Bundle Sizes (Recycler Only)** – Enabling the Use Bundles checkbox causes CC-5000 Vault Buys to bundle the various denominations according to the bundle sizes entered here. Assuming the sizes shown here, a vault buy for \$200 in ones and \$2500 in fifties will dispense 100 ones, wait for bill removal, will dispense another 100 ones, wait for removal, and will then start on the fifties in bundle sizes of 25 (2 bundles). If Use Bundles is unchecked, vault buys will dispense up to 100 bills per pass, and may mix denominations.

*Vault Buy Side* – Determines whether Vault Buys (and Vault Sells, for recyclers) use Side A or Side B of the dispenser or recycler. Management at the CC-5000 can also change this.

# Vault Timer Tab



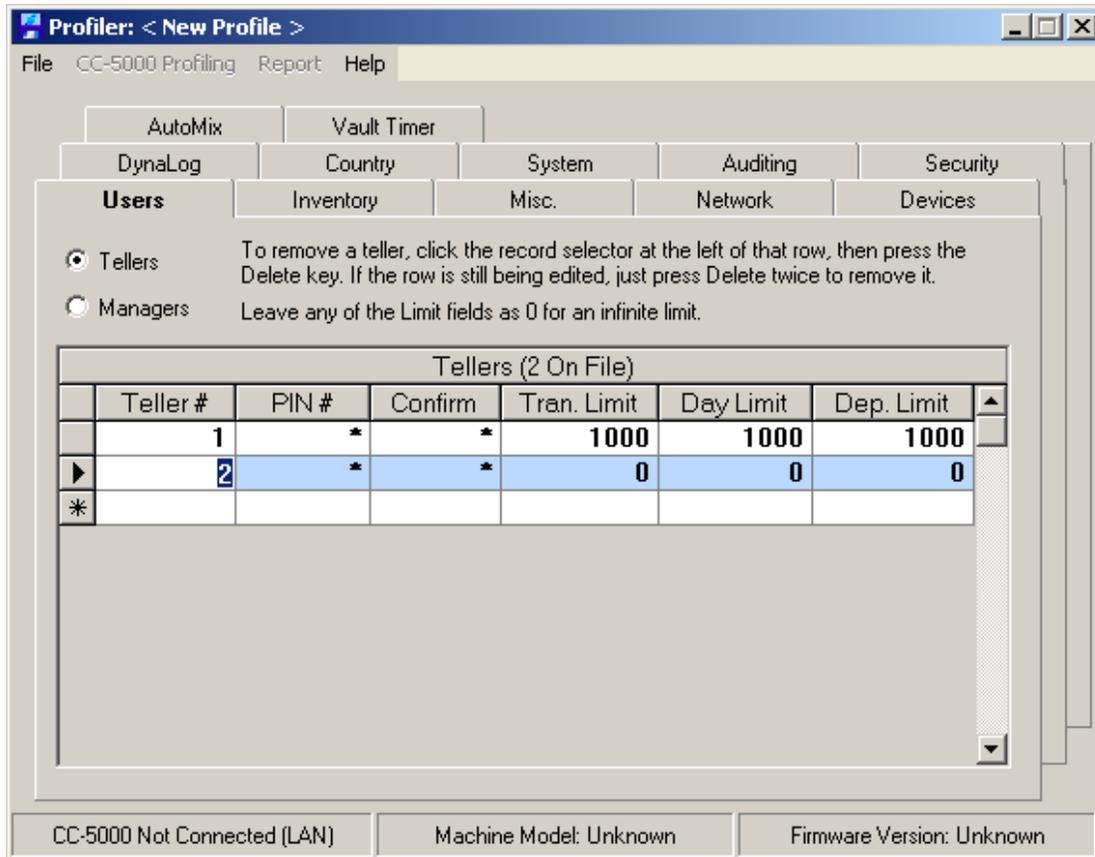
– This tab lets you enable the Vault Timer feature to prevent off-hours equipment usage and to set the weekday and time ranges for when usage can occur. Management at the CC-5000 can also change all Vault Timer settings:

*Use Vault Timer* – Enables or disables the Vault Timer functionality.

*Starting Day & Ending Day* – Lets you set which range of days in the week equipment usage is permitted. Typically this would be a Start Day of Monday and an Ending Day of Friday (for banks).

*Starting Times & Ending Times* – Lets you set a span of hours during each weekday during which the equipment can be used.

# Users Tab



– This tab lets you build the initial Tellers and Managers list, assign PIN numbers for each user, and set various limits for the Tellers. It is a more convenient way to set up the users at installation time, than having to enter them through the CC-5000 keypad. Users can be uploaded with or without uploading the profile:

*Tellers Option Button* – Puts the user list into the Teller setup view. Up to 100 tellers (cashiers if casino) can be added. Up to 8 digits can be assigned for teller numbers and PIN numbers. A PIN confirmation must be entered in the Confirm column. Tran. Limit is a whole-dollar entry of how much cash a teller can dispense in a single transaction. The Day Limit is how much they can dispense in a day. The Dep. Limit is a “deposit limit” which controls how much cash can be deposited at one time. Leaving a limit at 0 sets it as “no limit”.

*Managers Option Button* – Puts the user list into the Manager set-up view. Up to 25 managers can be added. Up to 8 digits can be assigned for manager numbers and PIN numbers. A PIN confirmation must be entered in the Confirm column. If a teller is also required to be a manager, they can use the same user number and PIN number for both user types, as the users are kept in two different lists in the CC-5000 memory. Managers do not have limit assignments.

- Both user lists (at the profiling PC) are kept in 128 bit AES-encrypted files, in the DynaCash folder. For Tellers, this file is **CC5000.aet**. For managers, the file is **CC5000.aem**. Since some branch banks have their tellers rotate between branches, these files can be copied to another profiling PC at another branch, so the user list doesn’t have to be entered again for CC-5000’s that will be shared anyway.
- Either type of user list can be cleared (users will be deleted), by clicking **File/Delete All Tellers** or **File/Delete All Managers** menu choice.

# Inventory Tab

Profiler: < CC5000 >

File CC-5000 Profiling Report Help

AutoMix Vault Timer

DynaLog Country System Auditing Security

Users **Inventory** Misc. Network Devices

Include Inventory In Upload

Cass. #	Mapping	Inventory	Denom	Near Full	Low Warn
1	\$1	\$ 0.00	\$1	100	100
2	\$5	\$ 0.00	\$5	100	100
3	\$10	\$ 0.00	\$10	100	100
4	\$20	\$ 0.00	\$20	100	100
5	\$50	\$ 0.00	\$50	100	25
6	\$100	\$ 0.00	\$100	100	25
7	N/A				
8	N/A				

Coin .00

CC-5000 Not Connected (LAN) Machine Model: Unknown Firmware Version: Unknown

– This tab is used to assign low bill warning points to each cassette (dispensers), low and high bill warning points to each denomination (recyclers), set the coin-dispensing mode, and upload initial inventory values to the CC-5000:

*Include Inventory In Upload* – For CC-5000's having bill dispenser firmware, sending the profile will also upload the cassette inventory amounts from the Inventory column, and the Coin amount. For recyclers, only the Coin amount will be uploaded.

*Low Points* – This column accepts piece count entries for each cassette (or each denomination, if a recycler will be used) that determine when the CC-5000 will warn the teller that bills are getting low.

*Near Full* – Set near full warning point for bill recyclers (except RZ-100). This can be up to 4000 bills to accommodate rollover storage of same denomination.

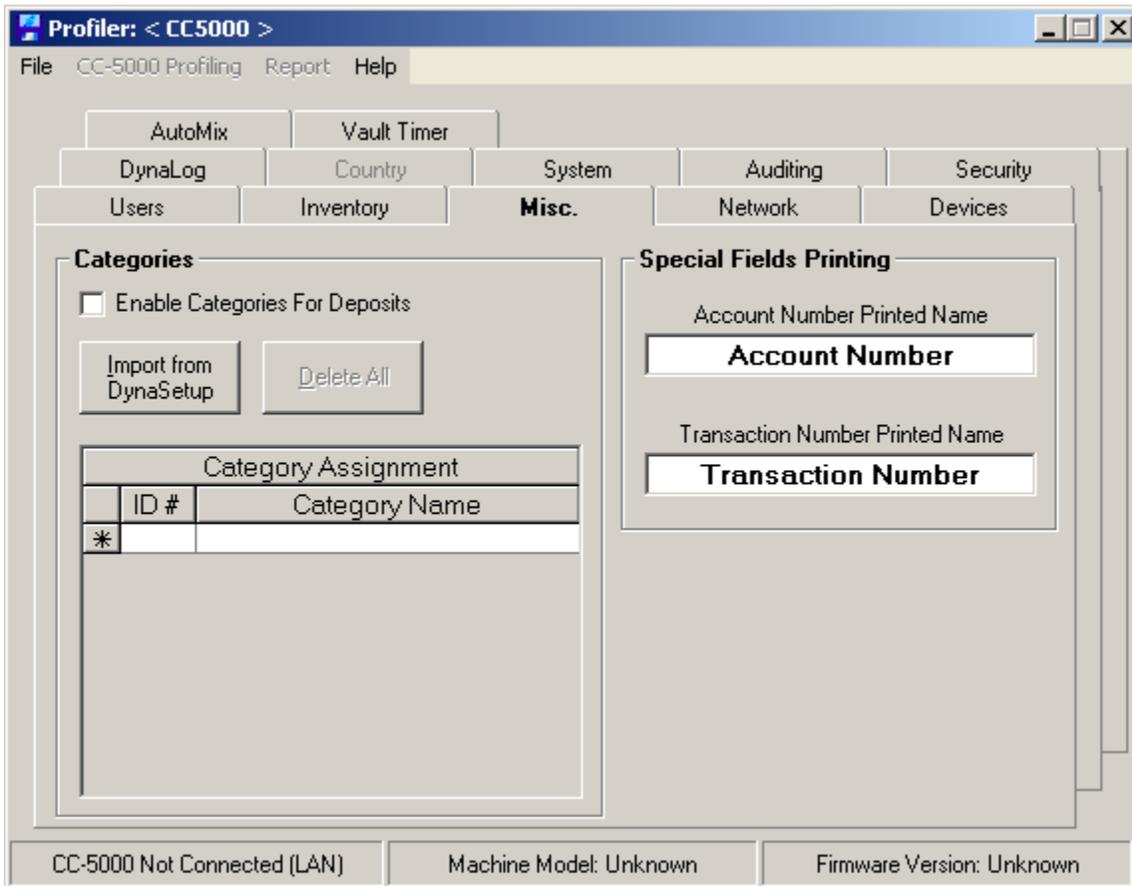
*Leveling (RZ-100 Only)* – When connecting to the RZ-100, Near Full changes to Leveling. This setting defines how many bills stay in the RZ cassettes per denomination when leveling the excess to the collection box.

*Mapping* – For cash dispensers and RZ-100 only. These drop-down choices let you assign a denomination type to each dispenser cassette. These are compared with the cassette read done by the CC-5000; if they don't agree, the CC-5000 displays a "Cassette Map Error" to warn the user that they may have cassettes swapped around. For the RZ-100, these denomination maps actually set the cassettes to the indicated denominations.

*Inventory Colum* – For cash dispensers only. These entries are a starting inventory amount (bills) that will be uploaded to the CC-5000 with the profile if the **Include Inventory in Upload** box is checked.

*Coin Inventory* – If a starting coin inventory amount is entered here, and the **Include Inventory in Upload** box is checked, the coin inventory amount will be uploaded to the CC-5000 when it is profiled.

# Misc Tab



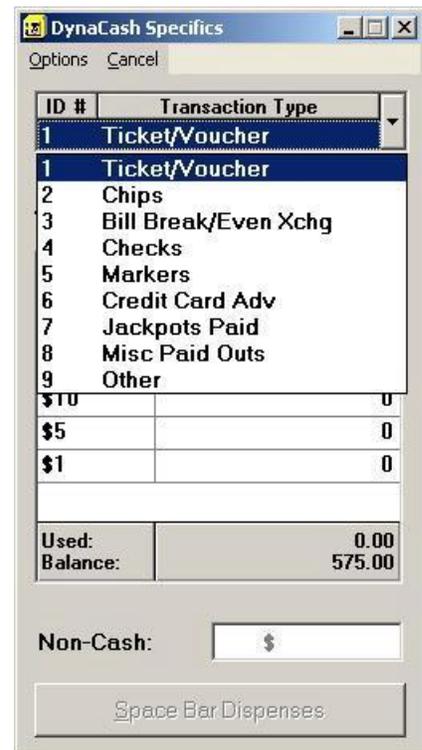
**Categories** - This option is geared specifically to the casino environment. It allows dispenses and deposits to be tracked by transaction type. Teller & Activity Reports give a printout with dispenses broken down by categories.

**Categories must be setup in DynaSetup, and uploaded into the CC-5000.**

**Setting Up Categories** - Open DynaSetup from the Start Menu and choose the “Categories” tab. Enter the category names. If categories are being used with Deposits (bill recyclers), check “Enable Categories for Deposits”.

After categories have been entered in DynaSetup, start the Profiling mode as detailed in the System Tab section of this document. Choose the “Categories” tab and click “Import From DynaSetup”. If categories are being used with Deposits (recyclers), check “Enable Categories for Deposits”. Verify that all Profiling Options in the other tabs are correct and upload the profile to the CC-5000.

**Using Categories** – If dispensing is started with the Specifics or Manual hotkey, it can be assigned to a category. Categories are defined at setup time.



**Specifics Window with Categories and Non-Cash**

User Reports and the Activity Report show totals for dispenses processed with the Specifics window broken down by category.

If categories are defined in Setup, a category must be chosen to proceed with any dispense that uses the Specifics window.

Up to 9 categories can be defined.

Categories can be selected with the Number 1 – 9 “Speed-key” associated with it in addition to the traditional method of selecting with arrow keys or by clicking on it.

Once a category is chosen, pressing the Space Bar or Enter key may directly dispense the amount, or it may be nominated the same way that any Specifics dispense may be.

Dispenses using the Mixed hotkey are not categorized. If all dispenses are to be categorized, then only a Specifics hotkey would be set up at installation time.

**Special Fields Printing** – This section defines what the CC-5000 will print when an associated Account and/or Transaction number is captured during an online dispense with DynaCash. For both the Account number and Transaction number, they can be defined by anything typed in the respective fields up to 20 characters.

# Network Tab

The screenshot shows the 'Network' tab in the Profiler: < CC5000 > application. The window title is 'Profiler: < CC5000 >' and the menu bar includes 'File', 'CC-5000 Profiling', 'Report', and 'Help'. The 'Network' tab is selected, showing the following settings:

- CC-5000 Ethernet Settings:**
  - Enable LAN
  - Use DHCP
  - IP Address: 192, 168, 1, 52
  - Net Mask: 255, 255, 255, 0
  - Gateway: 192, 168, 1, 1
  - Allow DHCP Fallback To Static IP
  - DHCP Timeout: 6 Seconds
- CC-5000 Hardware Address:**
  - MAC Address: Unknown
- DynaCash Connection:**
  - Teller PCs Communicate Via LAN
  - Response Latency: 0 Seconds
- PC LAN Ports (Profiling Only):**
  - UDP: 9006
  - TCP: 9005

At the bottom of the window, there are three status indicators: 'CC-5000 Not Connected (LAN)', 'Machine Model: Unknown', and 'Firmware Version: Unknown'.

– Contains all of the Ethernet setup options and IP address entry boxes:

*Enable LAN* – Sets whether the CC-5000 network capability is enabled.

*Use DHCP* – If checked, the CC-5000 attempts to acquire a network address and other network information from a DHCP server using the **Dynamic Host Configuration Protocol**. This is called a DHCP “lease”.

*Allow DHCP Fallback To Static IP* – If this is enabled, the CC-5000 will use a stored “static” IP address, Net Mask, and Gateway if it fails to acquire a DHCP address over the network. A static IP address must have been profiled or previously entered at the CC-5000, otherwise a fallback will result in a LAN Failure error at the CC-5000.

*DHCP Timeout* – If using DHCP, set a delay of 1 – 99 seconds (8 seconds is the default) for the CC-5000 to try to acquire a DHCP lease. If the delay expires without a lease being granted, the CC-5000 will fall back to use the static addresses (if Fallbacks are enabled). If Fallbacks are disabled, a LAN Failure error will occur.

*IP Address, Net Mask, & Gateway* – If not using DHCP, or if using DHCP but with Fallbacks enabled, enter valid addresses in these boxes. A Gateway entry is only required if communications will occur to another subnet.

*Teller PCs Communicate Via LAN* – If using DynaCash over LAN (**Teller PC's Communicate via LAN** is checked) you must disable DHCP and use valid static addresses in the **CC-5000 Ethernet Settings** entries.

*Response Latency* – This setting increases the amount of time the CC-5000 waits for a response from DynaCash. This would commonly be changed for slower network connections.

*PC LAN Ports (Profiling Only)* – Sets which ports on the profiling PC will be used to establish the network sockets to the CC-5000. The default values of 9006 and 9005 will generally be fine.

When profiling, the CC-5000 will send the MAC address as part of the firmware version response to the Profiler, which is then displayed on the Network tab.

*CC-5000 Hardware Address* – The Profiler displays a CC-5000 MAC address as part of the version protocol, and places it on the Network tab. It shows “Unknown” for the MAC address when Profiler is disconnected or if the CC-5000 omits that part of the string (the CC-5000 only sends the MAC if the hardware MAC function returns a non-Null address).

# Devices Tab

The screenshot shows the Profiler software interface for a CC-5000 machine. The 'Devices' tab is selected, displaying various configuration options. The 'Currency' section includes fields for Device Address (192.168.0.1), Device Port (50001), Max. Dispense Per-Pass Bill Count (100), and Max. Dispense Total Bill Count (1000). The 'Coin' section has checkboxes for Coin Enabled, Side 1 Use Drawer Coin, Side 2 Use Drawer Coin, and Using Dimes (checked). The 'Printer' section has radio buttons for No Printer Installed (selected), Citizens IDP-3550 (Impact), and Star TSP-600/700 Series (Thermal), along with Report Tear Off Lines (8) and Transaction Tear Off Lines (0). A status bar at the bottom indicates 'CC-5000 Not Connected (USB)', 'Machine Model: Unknown', and 'Firmware Version: Unknown'.

*Device Address* – Currently unavailable pending future release.

*Device Port* – Currently unavailable pending future release.

*Max. Dispense Per-Pass Bill Count* – Set the per-pass bill limit for multi-pass dispenses. This is machine-dependent, so you should never set the pass limit higher than what the machine offers as an output stacker piece count limit.

*Max. Dispense Total Bill Count* – This is the maximum amount of bills that can be dispensed in a single transaction.

*Allow One-Step Inventory Clear (RSM Models)* – Not Applicable.

*Twin Safe- No CF Checking (Talaris TCRs)* – This setting turns off counterfeit checking for Talaris Twin Safes. Leave this setting unchecked for Talaris Verteras.

*Use Telequip Coin Dispensers (Talaris TCRs)* – Not Applicable.

*Cassettes Dispense Collectively (RZ-100)* – This setting affects how the RZ-100 handles a cassette empty with multiple cassettes of the same denomination. Having the RZ-100 dispense collectively makes dispensing faster by waiting until the end of the dispense to pull the remaining bills of the same denomination as the empty cassette. If left unchecked, the bills will be dispensed individually in denominational order. In short; Collective Dispensing – Bills out of order but faster dispense, Individual Dispense – Bills in order but slower dispense.

*Coin Enabled* – If checked, this option enables the CC-5000 to track coin dispenses, whether they are manually tendered coin amounts or dispensed with a coin dispenser. Management through the CC-5000 keypad can also set this.

*Side 1 (or 2) Use Drawer Coin* – Sets whether Side A or B or both use drawer coin (no coin dispenser) to fulfill the coin requirements. Drawer coin gets logged to the CC-5000 totals as a convenience to track teller drawer coin given to customers. If either of these checkboxes is unchecked, a coin dispenser must be connected for that side.

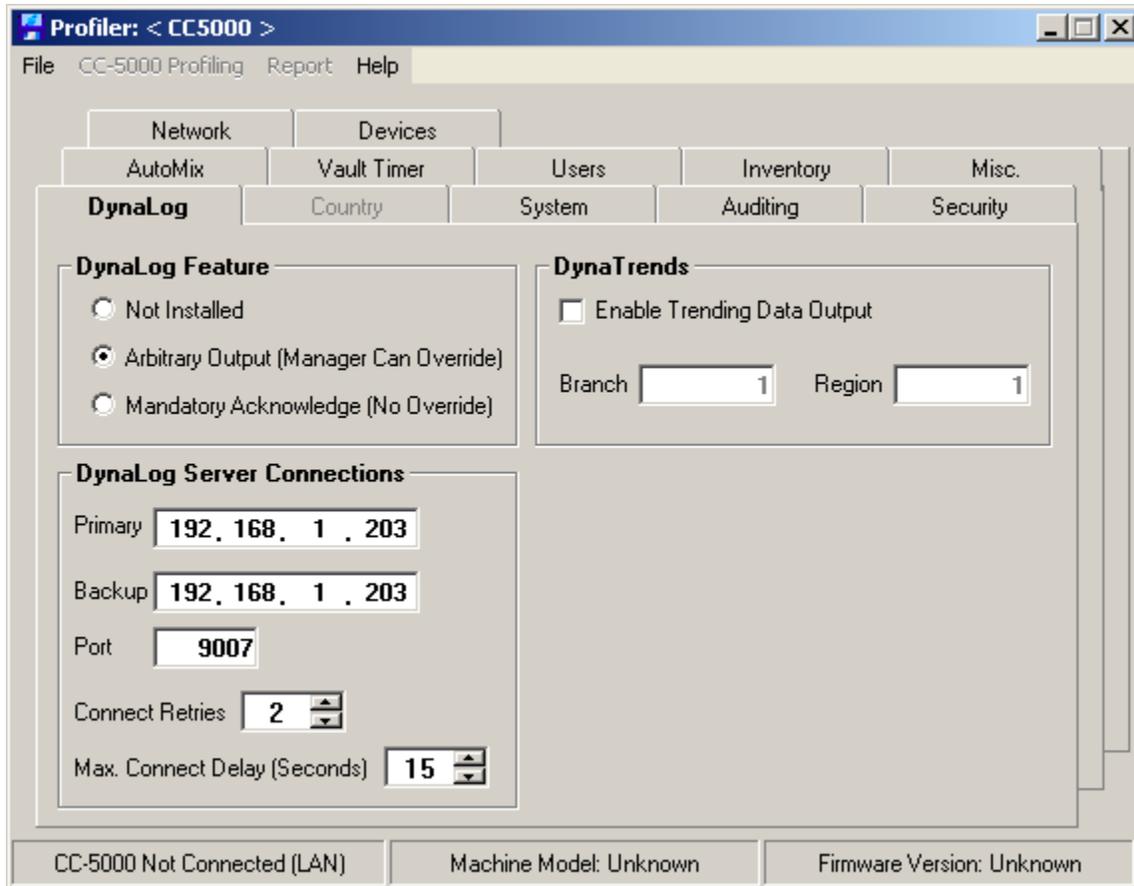
*Using Dimes Check Box* – Feature requested by casinos that don't use dimes. Telequip coin dispensers require a dowel be put into dimes slot in canister to prevent low point warning.

*Printer* – If using an audit printer with the CC-5000, choose one of the available printer models. If no printer will be connected, select "Not Installed". NOTE – for demo purposes without using a printer, the printer can be temporarily disabled at the CC-5000 even if a printer model has been profiled for use. See the CC-5000 demo mode notes for more on this.

*Report Tear Off Lines* – This lets you select from 1 to 10 linefeeds (default is 8) that the CC-5000 printed reports will advance when the report has printed. It lets you fine-tune the distance from the end of the report to the printer's tear-off bar.

*Transaction Tear Off Lines* – This lets you select from 1 to 10 linefeeds (default is 0) that the CC-5000 printer will advance when the transaction is finished. This makes it convenient to tear off the printout after each transaction.

# DynaLog Tab



When profiling to enable the EJ settings, use the **Remote Default** option on the Profiler **System** tab so that the CC-5000 EJ memory gets properly initialized.

**DynaLog Feature** – This enables the networked electronic journal option. All data that normally gets printed to the CC-5000 audit printer will be routed over the LAN to the DynaLog server. If a printer model was also selected, hardcopy gets printed as well. The **Must Acknowledge** option is a security feature – on an ongoing basis, the CC-5000 will not be able to continue operation unless it receives an acknowledgement that the DynaLog server is listening and logging the audit data. Selecting **Arbitrary Output** causes the CC-5000 to send the electronic print data to the DynaLog server, but without regard as to whether the server is even listening. Use the **Not Installed** choice to disable the DynaLog option. In the options list at the left side of the Auditing tab, scroll the list to the bottom to locate the DynaLog Server section. To enable EJ output, you'll need to select either the **Arbitrary Output** or **Mandatory Acknowledge** options. Which one you choose will depend on the level of security needed.

**DynaLog Server Connections** – The DynaLog Electronic Journal Server and Viewer applications may be installed on any number of PC's with no license cost. They are a free optional extension to the DynaCash system, and are shipped with each system on the DynaCash CD.

**Primary** – On the Profiler **Network** tab, check the **Enable LAN** box, then enter the **Primary** IP address in the box for that, in the format shown in the example.

**Backup** – If you will be using a backup server (Server 2), enter that IP address in the **Backup** entry box.

NOTE: A backup server isn't necessary but if one is configured, the EJ file will attempt to route to that server in the event that the primary server goes down. **NOTE – if using a backup server, you should configure all Viewers that may need to “see” that station's EJ for Auditor Mode. That way those Viewers will have access to the backup server.**

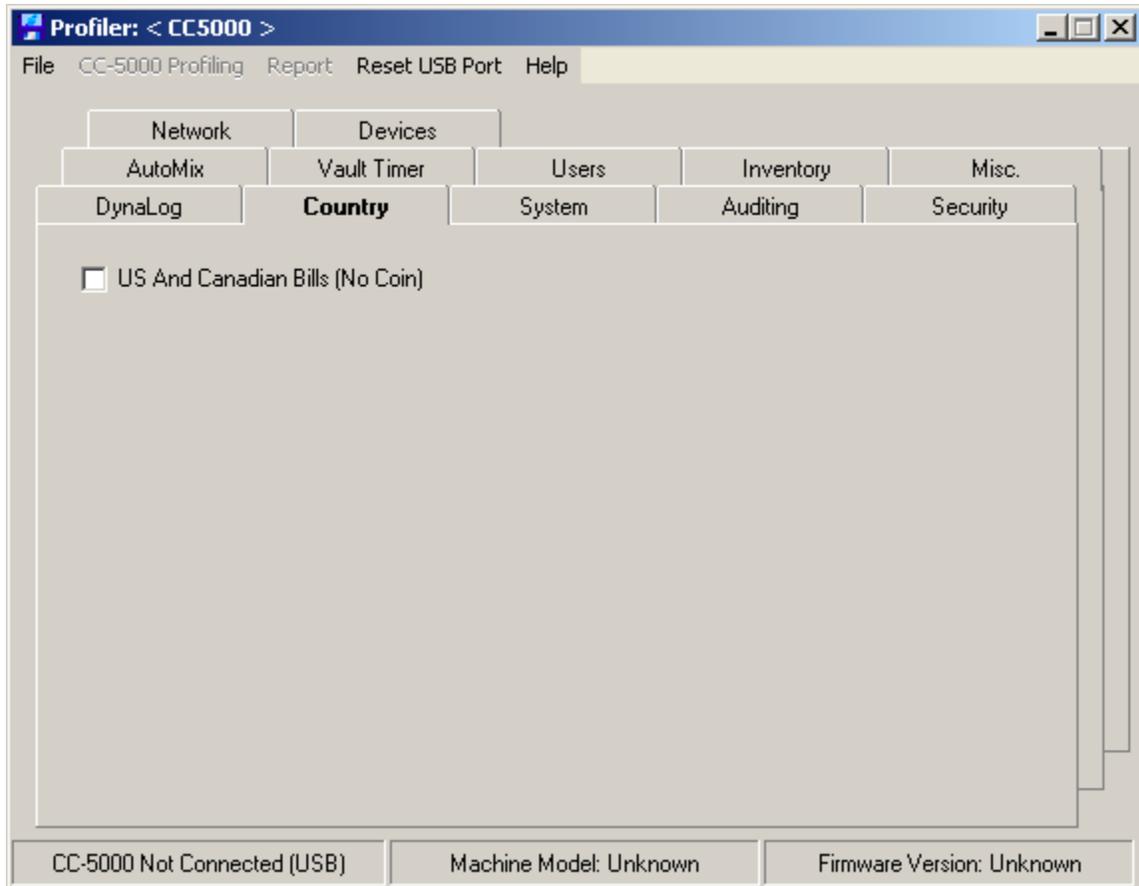
*EJ Server Port* – The default Server Port is 9007. Enter the EJ server port number or leave it at the default of 9007. Change this only if you had to change it in the DynaLog.ini Server configuration file. This port will be used for both the primary and backup servers.

*Connect Retries* – This set the amount of times the CC-5000 attempts to connect to the DynaLog Server before giving an error.

*Max. Connect Delay (Seconds)* – This sets the amount of time before the CC-5000 attempts connecting to the DynaLog Server.

*DynaTrends* – Currently unavailable pending future release.

# Country Tab



**US And Canadian Bills (No Coin)  
– Not Applicable.**

# Opening & Saving Profiles

**Opening & Saving Profiles** – The Profiler File menu choice lets you open a previously saved profile from disk or save a new profile to disk. You can also open an existing profile, make changes, and save it as a new profile. When the Profiler first shows, a standard default configuration is loaded in the various Profiler tabs.

To save your current profile, click File/Save Profile. The Save As dialog will be shown.



Choose a folder to save the profile in, then enter a descriptive file name for the profile and click OK.



You should see a message stating the profile was saved, and an encrypted Admin Password file (<filename>.aea) was also created.



The saved profile files can then be emailed to onsite technicians who can use the customer's DynaCash PC to profile a replacement CC-5000 if needed.

- Note – if the associated Admin Password (.aea) file is not included with the main profile (.pro file), or if an Admin Password and Password Confirmation were not entered when the profile was saved, the profile can be opened but the Security tab's Admin Password and Confirm entries will be blank. A branch manager at the site would then make the entry before uploading the profile to the CC-5000. Alternatively, the password could be entered in the CC-5000 through the keypad at a later time.

To open a saved profile, click File/Open Profile on the Profiler's menu. Browse for the file, select it, and then click OK.



# Uploading to the CC-5000

– There are several options for uploading to the CC-5000 or reading data in from the keypad. For any of these options to be enabled, the Profiler must have already established contact with the CC-5000 (refer to the **System Tab CC-5000 Connection** topic).

When ready, click the Profiler's **CC-5000 Profiling** menu choice.



*Send Profile Only (No Users)* – This uploads only the profile (no managers or tellers) to the CC-5000. If the **Inventory Tab's Include Inventory In Upload** option is checked, coin and bill inventory entered in the Profiler will be included in the upload if the CC-5000 has a cash dispenser program. If the CC-5000 has a recycler program, only coin inventory gets sent.

- Note – If Remote default option is active, then a warning message: **“Warning – You have the Remote Default option selected! This will default the CC-5000, though any users or inventory assigned in the Profiler will be saved to the CC-5000. Are you sure you want to continue?”**

*Send Profile And Users* – This uploads the profile and any entered managers and tellers. Inventory also gets sent if checked to be included, with only coin getting sent if the CC-5000 has a recycler program. **The current user list and user totals in the CC-5000 will be overwritten! Use this feature carefully!**

- Note – **Since all teller totals will become zero, you should first clear the CC-5000 Activity (if not doing a Remote Default) so Grand Totals will be zero as well.**
- Note – If Remote default option is active, then a 2<sup>nd</sup> warning message: **“Warning – You have the Remote Default option selected! This will default the CC-5000, though any users or inventory assigned in the Profiler will be saved to the CC-5000. Are you sure you want to continue?”**
- Note – for either “Send Profile” choice, the CC-5000 will disconnect from the Profiler after receiving the profile.

*Send Users Only (No Profile)* – This uploads only the current teller and manager list. The CC-5000 remains connected in case a profile is to be sent next. **The current user list and user totals in the CC-5000 will be overwritten! Use this feature carefully!**

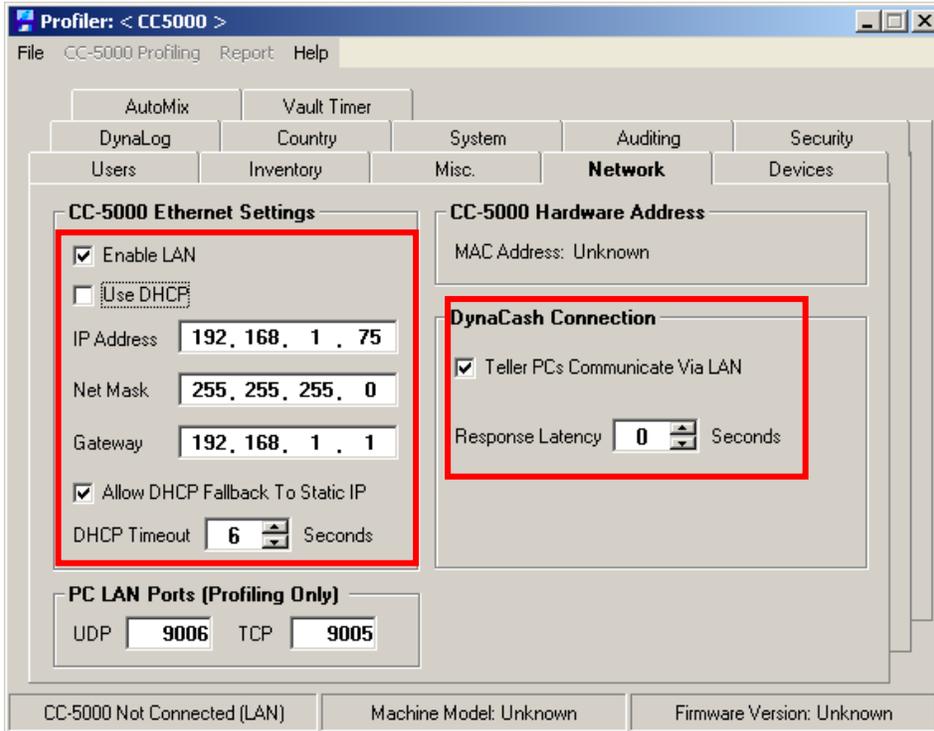
- Note – **Since all teller totals will become zero, you should first clear the CC-5000 Activity (if not doing a Remote Default) so Grand Totals will be zero as well.**

*Reset USB Port* menu choice – If a USB connection error occurs, this menu item attempts to reset the USB pipe to reestablish the CC-5000 connection. If the connection seems unrecoverable, sometimes unplugging and then reconnecting the USB cable can recover it, when combined with a reset from the menu.

# CC-5000 over LAN Quick Notes for Command Line Method

To set up DynaCash for use over LAN with a CC-5000, follow these steps:

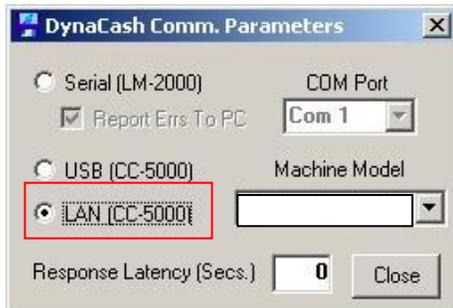
In the Profiler Network tab, set up the profile for LAN enabled, DHCP disabled, and give the CC-5000 a valid static IP address and NetMask. Check the **Teller PCs Communicate via LAN** box.



After changing the Network settings, profile the CC-5000 as usual.

In DynaCash Setup, open the Communications window from the menu option.

Select the LAN (CC-5000) option. Leave the Response Latency at 0 unless DynaCash reports command timeouts during testing.



Each workstation will need the command line modified in the DynaCash Runtime shortcut properties.

For DynaCash running locally on workstations (USB), no command line would be used, unless using LAN communications from that PC directly to the CC-5000. For server installs of DynaCash (Citrix, Terminal Services, etc.) the workstation PC's shortcut to DynaCash needs to have the CC-

5000 static IP address and one of the 2 available CC-5000 TCP port numbers added as a command line argument.

The CC-5000 port number to use depends on which side (A or B) of the CC-5000 the workstation needs to sign on to. **For Side A, the port number 9001 must be used. For Side B, use 9002. Using any other port number will result in the connection not being established.** The port number passed via the command line is how commands get steered to the correct side of the CC-5000.

Since the CC-5000 IP address is also a command line argument, one server using one copy of DynaCash can control multiple CC-5000's. The various workstations pass in the proper IP address for the CC-5000 they want to use, via their shortcuts to DynaCash on the server. This way, the single DynaCash.ini file on the server can be shared with everyone, since it doesn't contain the port number or IP address.

**NOTE – Each CC-5000 connected for LAN use by DynaCash must have DHCP disabled and will require a unique static IP address compatible to the subnet the CC-5000 is located on.**

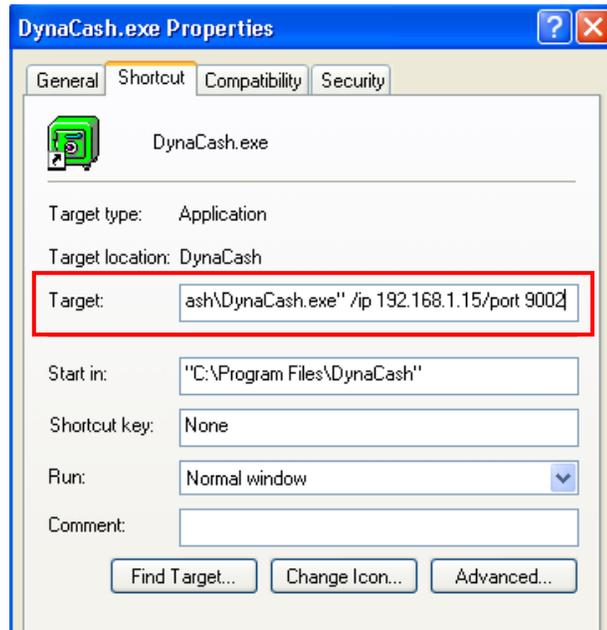
The command line argument to specify the CC-5000 IP address and port is:

**"<path> DynaCash.exe" /ip <IP address in "dot" format> /port <9001 or 9002>**

The "/ip" switch indicates that an IP address will follow. The IP address must be in a format such as "192.168.1.10". Lead zeroes are not allowed. Following is an example of how to launch a server install of DynaCash (from the workstation shortcut "Target" entry) from a workstation meant to be used on Side 2. It assumes that from a workstation perspective, DynaCash is in the M:\Program Files\DynaCash folder, and the CC-5000 has static IP address of 192.168.1.15:

***"M:\Program Files\DynaCash\DynaCash.exe" /ip 192.168.1.15 /port 9002***

**Note: The "/ip" and "/port" switches and their parameters are *outside* of the quotation marks.**



# CC-5000 over LAN Quick Notes for Workstation Method

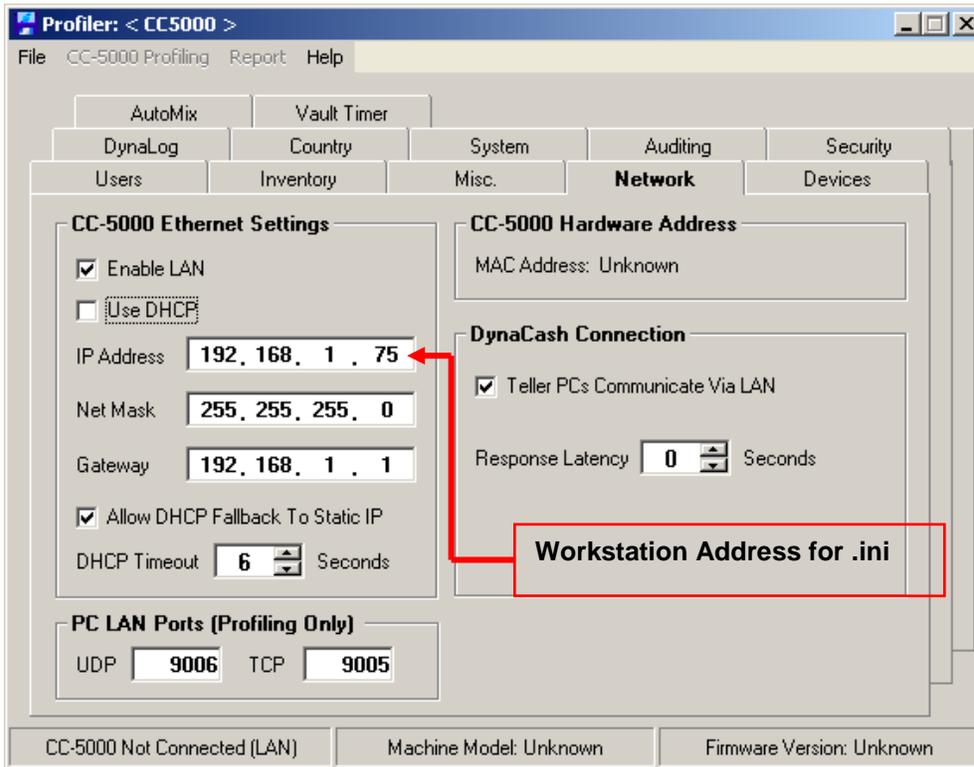
To set up DynaCash for use over LAN with a CC-5000, follow these steps:

## Profile the CC-5000:

Each CC-5000 connected for LAN use by DynaCash must have DHCP disabled and will require a unique static IP address compatible to the subnet the CC-5000 is located on.

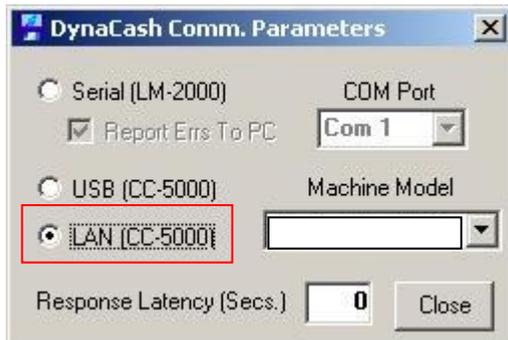
In the Profiler **Network** tab, set up the profile for LAN enabled, DHCP disabled, and give the CC-5000 a valid static IP address and NetMask. Check the **Teller PCs Communicate Via LAN** box.

After changing the Network settings, profile the CC-5000 as usual.



## Change DynaCash Setup System Type:

Start DynaCash Setup and open the **System** window from the menu option.

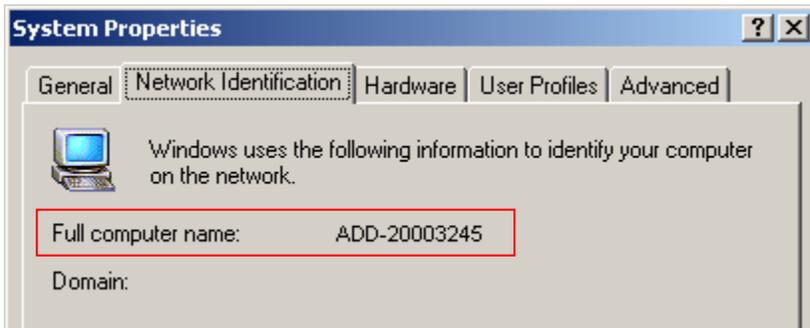


Select the "LAN (CC-5000)" option.

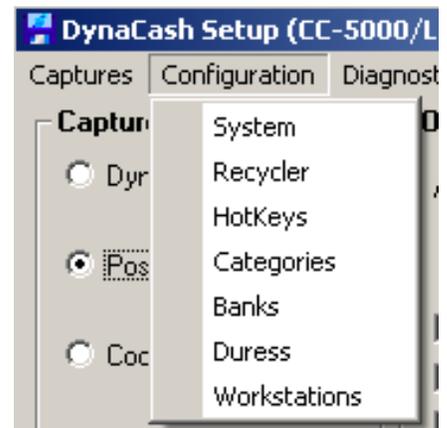
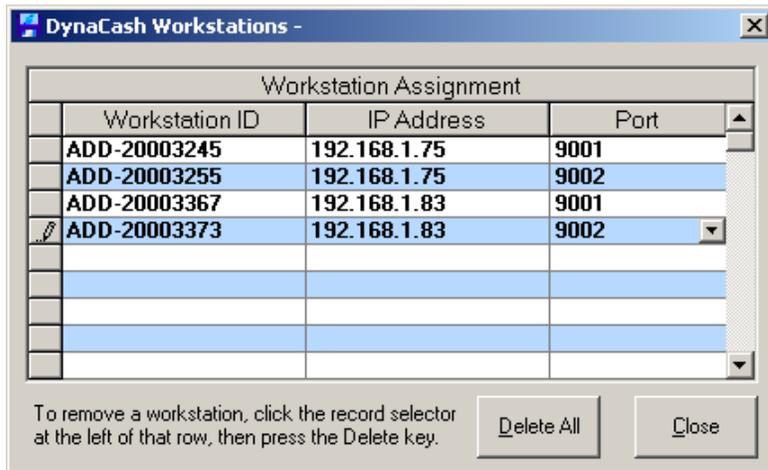
Response Latency is 0 by default. If experiencing command timeouts due to network traffic it may need to be set to a higher value. For example, setting it to 10 would give DynaCash 10 extra seconds to retry to establish communication with the server before it times out and disconnects.

## Modify the Workstations entry in DynaSetup:

Before setting up the workstation section you will need to know the computer names of the workstations on the left and right sides of the dispenser. Look in the computer's system properties under the "Network Identification" Tab for Windows 2000 systems, "Computer Name" for Windows XP/7 systems, or System Info for Wyse terminals.



In DynaSetup under Configuration is the Workstations menu. This is where you will set up what computers connect to what CC-5000 and on what side will they dispense.



Here you will enter the Workstation name into the Workstation ID field, the IP address of the CC-5000 that workstation should connect to and which port that workstation should use (9001 generally being the left side of the dispenser/recycler and 9002 being the right).

# CC-5000 LAN Disable Procedures

If the CC-5000 keypad has been enabled for LAN by the profiler, the keypad will attempt to connect to the LAN every time the CC-5000 is turned off and back on.

If unable to connect to the LAN, the keypad will display the following message  
LAN CONNECTION FAILED, PRESS **C** KEY  
then  
RETRY NETWORK INTERFACE? Y/N

Follow one of these procedures to disable the LAN interface:

**Temporary Fix** (daily session) until unit is powered off and on again:

1. When the message: "LAN CONNECTION FAILED, PRESS **C** KEY" appears on the LCD keypad, and may also toggle with "CHECK NETWORK CABLE". At this point, press the **C** Key.
2. RETRY NETWORK INTERFACE, Y/N, select **NO**.
3. Keypad LCD will read:  
"NETWORK DISABLED, CC-5000 IS OFF NETWORK"
4. Following this procedure will temporary disable the LAN, and allow you to proceed to log into Side A or Side B.

**\*THIS IS ONLY A TEMPORARY FIX. ONCE THE CC-5000 IS POWERED OFF, AND ON AGAIN, THE LAN INTERFACE WILL BECOME ENABLED AGAIN.**

**Permanently** to TURN OFF the LAN, DO THE FOLLOWING:

1. When the message: "LAN CONNECTION FAILED, PRESS **C** KEY" appears on the LCD keypad, and may also toggle with "CHECK NETWORK CABLE". At this point, press the **C** Key.
2. RETRY NETWORK INTERFACE, Y/N, select **NO**.
3. Once you say NO, you must **VERY QUICKLY** press and hold down the **Blue** (DENOM) key until you see:  
"CHANGE NETWORK SETTINGS?" Y/N
4. Select YES, to change the default network settings
5. Enter the Password. This is either the Admin or the Manufacturer's Default password.
6. Disable Network Y/N, select **YES**
7. LCD Display will read "**PROFILE CHANGES SAVED TO FLASH**"
8. This permanently turns off the LAN, and allows you to turn off the CC-5000 and back on without getting the LAN messages. The keypad updates and backs-up the current keypad profile everyday when the Manager performs CLEAR ACTIVITY using standard End-of-Day functions.

## CC-5000 Firmware and What DynaSetup to Profile With

The main part of DynaCash that is affected when talking about CC-5000 firmware is DynaSetup. The CC-5000 firmware requires a minimum version of DynaSetup to profile the CC-5000 properly.

V2.0.9002 DynaSetup can be used to profile CC-5000 Firmware Version 5.1.10-5.0.45. Some of the older Firmwares may give a checksum error when using this version of DynaSetup to get the current profile from the CC-5000. Firmwares V5.0.80-5.0.85 had an issue where even after profiling they will always give this checksum error when trying to get the profile using this version of DynaSetup.

V2.0.80 DynaSetup can only be used to profile and get the current profile from V5.0.80-5.0.85 firmware.

V2.0.62 DynaSetup should be used to profile V5.0.45 and 5.0.44 firmware.

V2.0.44 DynaSetup should be used to profile V5.0.43 – 5.0.40 firmware.

V5.0.41 DynaSetup should be used to profile V5.0.39 and earlier firmwares.

Released Firmware	Version of DynaSetup Needed for Profiling
5.1.10	2.0.9002
5.1.00	2.0.9002
5.0.90	2.0.9002
5.0.85	2.0.80
5.0.80	2.0.80
5.0.67	2.0.74
5.0.65	2.0.74
5.0.63	2.0.74
5.0.62	2.0.74
5.0.61	2.0.70
5.0.57	2.0.70
5.0.51	2.0.70
5.0.49	2.0.62
5.0.45	2.0.62
5.0.44	2.0.62
5.0.43	2.0.44
5.0.42	2.0.44
5.0.39	2.0.41
5.0.38	2.0.41
5.0.35	2.0.41
5.0.29	2.0.41

# CC-5000 Firmware Update Procedure

The firmware, in the CC-5000 flash file system, is the basic program that controls the CC-5000. The Update Manager program provides the ability to replace the CC-5000 firmware with a newer program file.

**Important Note:** Before starting the update process, be sure to have the new CC-5000 program bin file available to the programming pc BEFORE beginning the update process. The file can be on any media that is available via Windows Explorer to the programming pc (cd, usb drive, hard drive, or network).

If the update process is interrupted or canceled out of because the new bin file isn't available, the old bin file may be erased and a new one will not be available to replace it. This will leave the CC-5000 without a Primary program file, which may require extra steps be taken to reload the Primary file.

## Overview of Firmware Update Procedure

1. **Enable LAN on CC-5000 & Set CC-5000 TCP/IP Settings**
2. **Set PC TCP/IP LAN Settings** (if using a direct connection to CC-5000)
3. **Connect CC-5000 to PC via Crossover Cable, Switch, or Network**
4. **Set CC-5000 in Programming Mode**
5. **Start Update Manager Software**
6. **In Update Manager, Connect to CC-5000** (Search for Devices, Query by IP)
7. **Double Click the CC-5000 in the List** (highlighted & queried by program)
8. **Select "Download" Tab**
9. **Select File Marked as "Primary"** (If it is not already highlighted)
10. **Click the "Replace File" Selection**
11. **Locate the New Firmware File in the Popup Window and Click "Open"**
12. **Firmware Updates & Last Line of Dialog Box Reads "Replace Complete"**
13. **Close Update Manager Program**
14. **Default CC-5000** (Hold down **C** while powering up till "Default Y/N" shows)

### Notes:

- Be absolutely certain to choose the proper file for replacement! The program file is in the format "[Machine Type] V5.X.XX.bin" and the line ends with the word "Primary". It is usually the first file in the list.
- If CC-5000 gives an "Invalid Profile" Warning, it will also need to be Profiled. This means that the previous profile is not compatible with the new firmware, or the profile is corrupt. Profiling is covered later this document.
- **Always Default the CC-5000 after a new program is loaded.**

## Setting CC-5000 TCP/IP LAN Settings

Hold down **C** while powering on the CC-5000



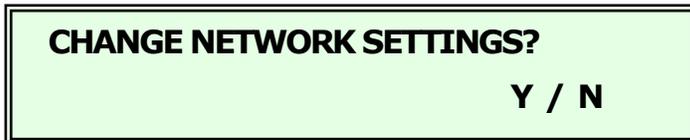
Loading Program Prompt shows

Continue holding through DENOM Up messages

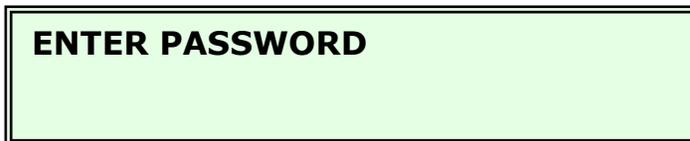


If any errors are encountered at start up, **attend to the error, but then quickly go back to holding the Denom key.**

Continue to hold until the ENDWing shows



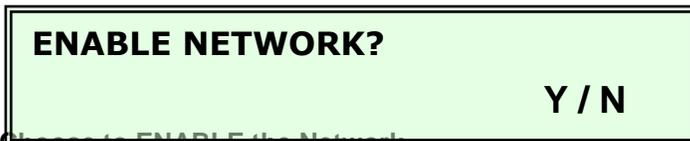
Press to Change Network Settings



Enter the **ADMIN PASSWORD**, then press Yes. The Admin Password is set at installation time. It is only given to upper level management. Contact your dealer if the Admin Password is unknown.

The Enable/Disable Network Menu appears

(Enable or Disable is shown depending if the network is currently enabled or not)



Choose to **ENABLE** the Network



Press to Change DHCP Settings



The Enable/Disable DHCP Selection appears

(Enable or Disable is shown depending if the network is currently enabled or not)

**DISABLE DHCP?**  
Y / N

Choose to ~~DISABLE DHCP~~

**DHCP NOTE:**  
It is possible to set the CC-5000 to use DHCP if the connection to the programming pc is made on an established network. In this case, DHCP would be enabled, and the steps to set IP Address and Netmask can be skipped. The settings on the programming pc would not need to be changed, and the CC-5000 is connected to the network just as a pc would be.

**CHANGE IP ADDRESS?**  
Y / N

Press

YES  
to Change IP Address

Enter an IP Address that is 1 number different from the IP Address that is set on the computer that is being used to run the Update Manager program. A common example would be to set the IP Address on the computer at 192.168.1.14, and set the CC-5000 IP Address to 192.168.1.13. After entering the new IP Address, press "YES" to accept it.

**CHANGE NETMASK?**  
Y / N

Press

YES  
to Change Netmask

Enter a Netmask that is identical to the Netmask on the programming PC. A common Netmask would be 255.255.255.0. After entering the new Netmask, press "YES" to accept it.

**CHANGE GATEWAY?**  
Y / N

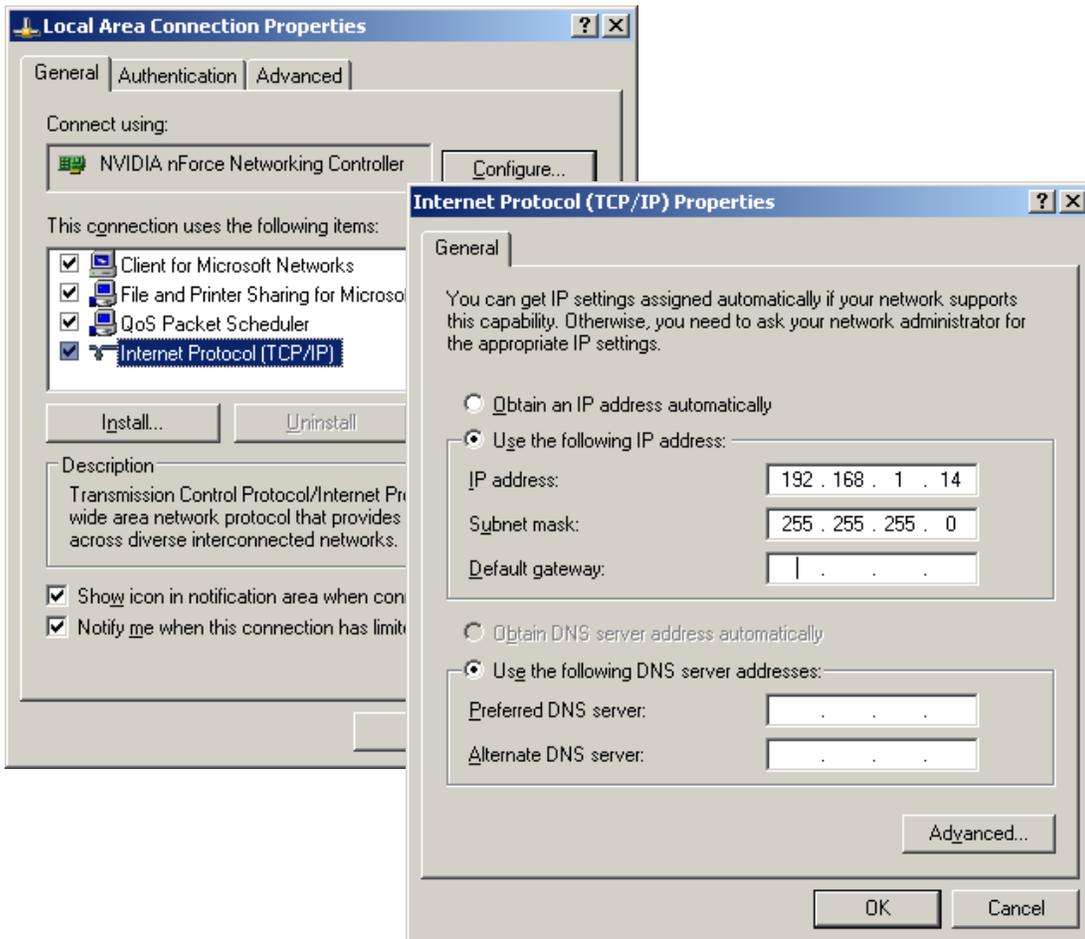
NO  
to Change Gateway

The Gateway needs to be set to the IP address of the PC that is being connected to the CC-5000.

## Setting PC TCP/IP Settings

Necessary if using a direct connection from programming PC to CC-5000

1. Open the Windows “Network Connections” window  
Right clicking “My Network Places” opens the Network Connections window.
2. Open the “Local Area Connection Properties” window  
Right click on the “Local Area Connection” and choose “Properties”
3. Open the “Internet Protocol (TCP/IP) Properties” window
4. Set the IP Address  
Enter an IP Address that is 1 number different from the IP Address that is set on the CC-5000. A common example would be to set the IP Address on the computer at 192.168.1.14, and set the CC-5000 IP Address to 192.168.1.13.
5. Set the Subnet Mask  
Enter a Netmask that is identical to the Netmask on the CC-5000. A common Netmask would be 255.255.255.0.
6. Click “OK” and Close All Windows  
Leave the “Default Gateway” & DNS Settings blank



# Connecting CC-5000 & PC

The connection between the programming PC and the CC-5000 is made via a crossover cable, a hub, or connecting to an established network.



## 1. Direct Connection

A direct connection between the CC-5000 LAN Port and the PC is made by using a Crossover CAT5 cable between them.

## 2. Hub/Standalone Router Connection

If a hub or standalone router is used to make the connection, then two straight thru CAT5 cables would be used. The first cable connects the CC-5000 to a the hub/router and the second cable connects the hub to the PC. The two cables would both be in "Normal" (not Uplink) ports on the hub/router.

## 3. Network Connection

The CC-5000 can make the connection to the programming pc through an established network. In this case, the CC-5000 is connected to the network just as a pc would be. DHCP would be enabled in the CC-5000 if the network uses it. The settings on the programming pc would not need to be changed.

# Setting CC-5000 In Programming Mode

Hold down  while powering on the CC-5000

Loading Program Prompt shows

Continue holding  through Power Up messages

If any errors are encountered at start up, **attend to the error, but then quickly go back to holding the Yes key.**

Continue to hold  until the following shows

**PROFILE SYSTEM?**  
**Y / N**

Press  at Profile System Prompt

**UPLOAD NEW PROGRAM?**  
**Y / N**

Press  at Upload New Program Prompt

**AWAITING PROGRAM**  
**PRESS C KEY TO CANCEL**

Leave the CC-5000 in the Awaiting Program state when attempting to connect to it with the Update Manager Software.

**Additional Note:** If the display at power up never moves past the “LOADING PROGRAM PLEASE WAIT” prompt, it is an indication that the primary program file is missing. It is still possible to load a program with the CC-5000 in this state. Proceed to attempt to locate the CC-5000 with the Update Manager software as covered in the next section.

# Using the Update Manager Software

**Important Note:** Before starting the update process, be sure to have the new CC-5000 program bin file available to the programming pc BEFORE beginning the update process. The file can be on any media that is available via Windows Explorer to the programming pc (cd, usb drive, hard drive, or network).

If the update process is interrupted or canceled out of because the new bin file isn't available, the old bin file may be erased and a new one will not be available to replace it. This will leave the CC-5000 without a Primary program file, which may require extra steps be taken to reload the Primary file.

Follow these steps to update the current CC-5000 program:

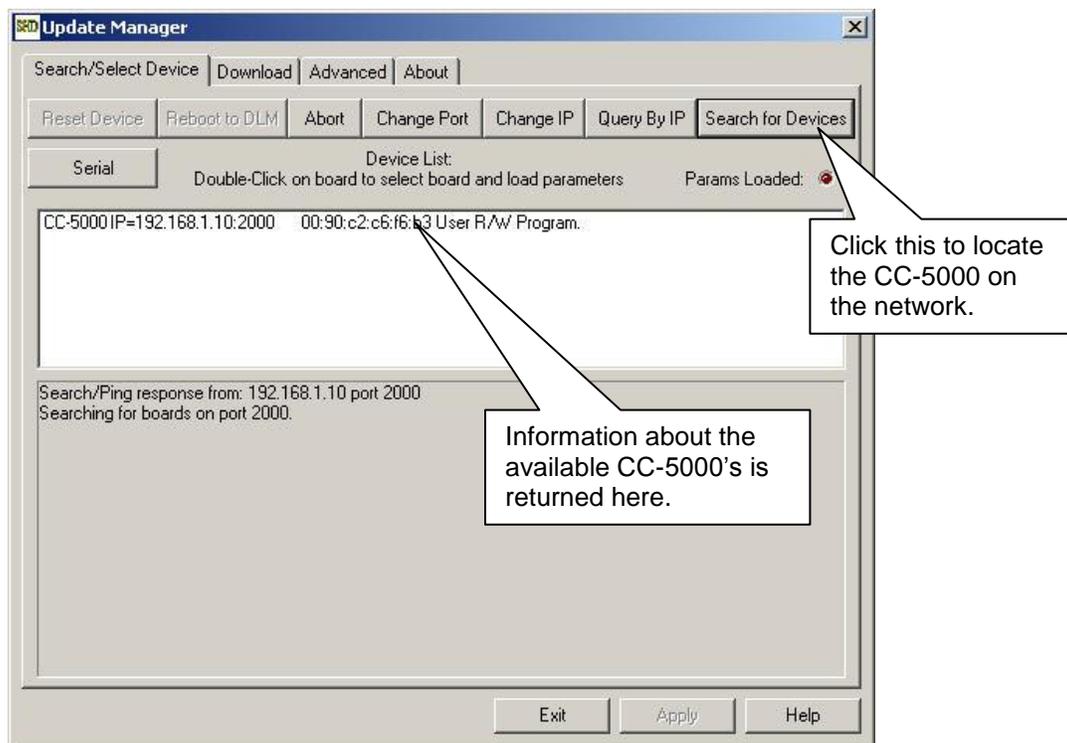
1. **Connect the CC-5000 & the Programming PC** via a crossover cable, hub, or by connecting to an established network.
2. **Make sure that the CC-5000 LAN feature is working** (no LAN CONNECTION FAILED message at CC-5000 power up, and CC-5000 LAN is not disabled). CC-5000 LAN setup via the CC-5000 keypad is covered above. You should be able to plug a CC-5000 into an established network and get an automatic connection, but in this case DHCP on the CC-5000 will probably need to be enabled.
3. **Set the CC-5000 in programming mode.** This is covered in more detail above. But to recap, with the CC-5000 power off, hold down the “**Yes (+)**” key and power on, while holding that key. Assuming that the network comes up OK, after several seconds the **PROFILE SYSTEM?** prompt should appear. Reply with the “**No (-)**” key to that. If the network initialized OK, the **LOAD NEW PROGRAM?** prompt will show next. If the network did not come up properly, this prompt won't show and the network problem will need to be fixed before the CC-5000 can be reprogrammed. Reply with the “**Yes (+)**” key to **LOAD NEW PROGRAM?** and the LCD will show **AWAITING PROGRAM – PRESS C KEY TO CANCEL.** Programming can be cancelled at any time by pressing the **C** key.

**Additional Note:** If the display at power up never moves past the “**LOADING PROGRAM PLEASE WAIT**” prompt, it is an indication that the primary program file is missing. It is still possible to load a program with the CC-5000 in this state. Proceed to attempt to locate the CC-5000 with the Update Manager software as covered in the following sections.

4. **Insert Media Containing Update Manager & New Bin Files into Programming PC.** The program file and the new bin file that is being installed on the CC-5000 should both be available on the programming pc before the update is attempted. **See Important Note Above.**
5. **Launch the Update Manager** by locating and double clicking



6. **Locate CC-5000 with Update Manager** by clicking the **Search for Devices** button. The CC-5000 should be found and shown in the list, along with it's IP Address.



***If Clicking “Search for Devices” Did Not Locate the CC-5000:***

If a Static IP Address was set in the CC-5000, you may need to use the **Query By IP** feature if the Search for Devices does not load the CC-5000 info into the list. Click on “Query by IP” and a secondary window pops up. The CC-5000 IP Address is entered. Additional info on CC-5000 LAN Settings are covered previously in this document.

Occasionally, you may need to first use the **Change IP** feature before you do a **Query by IP**. In this case, the address that you put in the secondary **Change IP** pop up window would be the IP Address that was previously programmed into the CC-5000 LAN Settings.

**Note:** Windows XP with SP2 may block responses from the CC-5000 with the default settings. This can usually be seen that the CC-5000 cannot be searched for, but can be found by pinging the IP address. To resolve this, Microsoft recommends opening the port:

Adding the port exception:

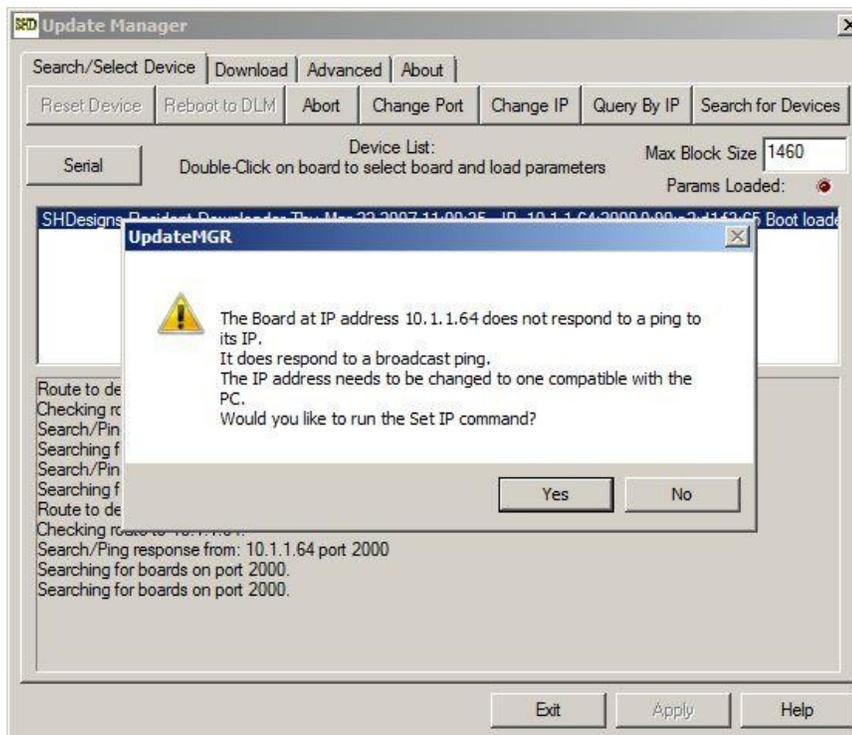
- Click Start, click Run, type Wscui.cpl, and then click OK to open Windows Firewall.
- Click the Exceptions tab, and then click Add Port to display the Add a Port dialog box.
- Enter the port number that your program uses. (DownloadMgr uses port 2000 by default.)
- Select the TCP or UDP protocol, depending upon what your program uses. (select UDP.)

- In the Name field, type a descriptive name for the port.
- Click Change Scope to view or to set the scope for the port exception, and then click OK.
- Click OK to close the Add a Port dialog box.

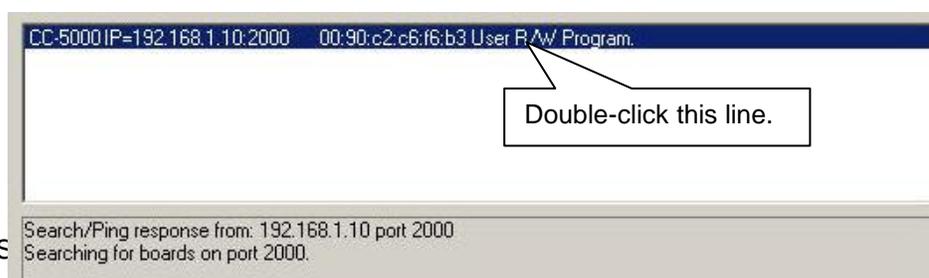
To verify that the port settings are correct for your pc, test the program.

**If the CC-5000 display never moves past the “LOADING PROGRAM PLEASE WAIT” prompt,** it is an indication that the primary program file is missing. It is still possible to load a program with the CC-5000 in this state. Locate the CC-5000 with the Update Manager software as follows.

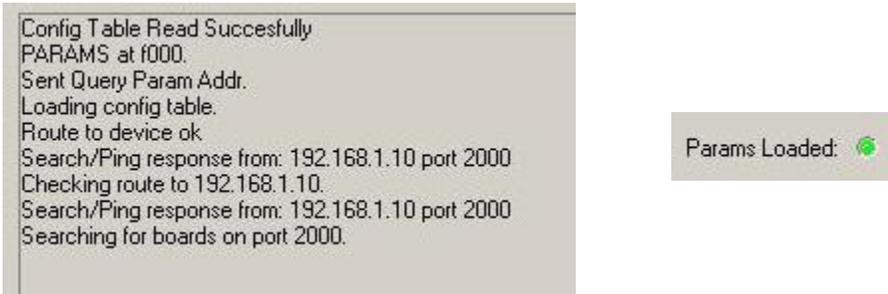
- Click **Search for Devices**. You may have to click it more than once, but the CC-5000 should show up in the list.
- Double click the CC-5000 info in the list. Instead of giving the “Config Table Read Successfully” in the message area below the white list area, you will see a secondary window as shown below.
- Click “Yes” to run the Set IP Command. In the window that pops up, enter an IP Address that is 1 number away from the current IP Address of the programming PC. For example, if the PC is set for an IP Address of 192.168.1.14, enter an IP Address of 192.168.1.13 .



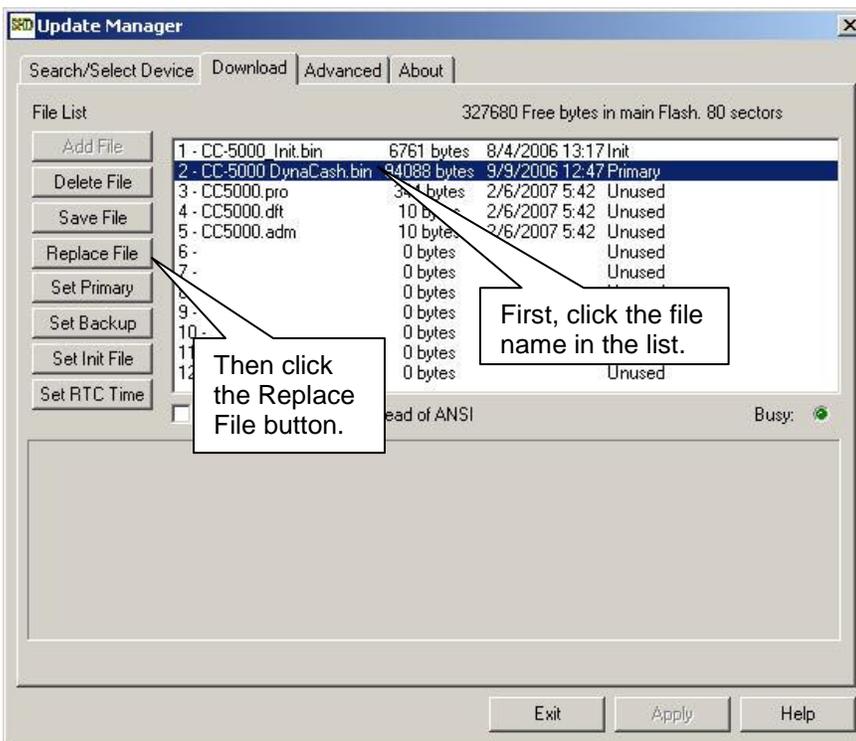
7. **Double-click the CC-5000 line item in the list,** for the unit you want to program.



The Update Manager will fill in some status data from the CC-5000, in the area below the list, and the **Params Loaded** “LED” will be green:

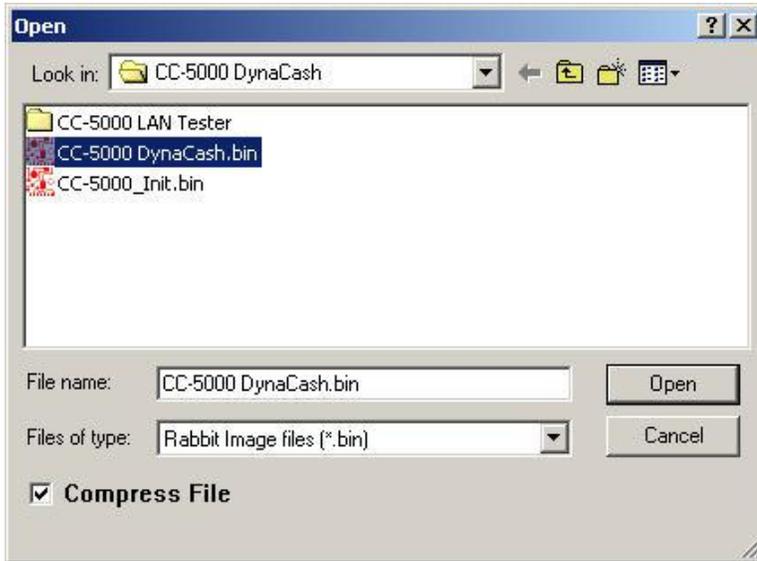


8. **Click on the Download tab.** The current files in the CC-5000 flash file system will be shown.

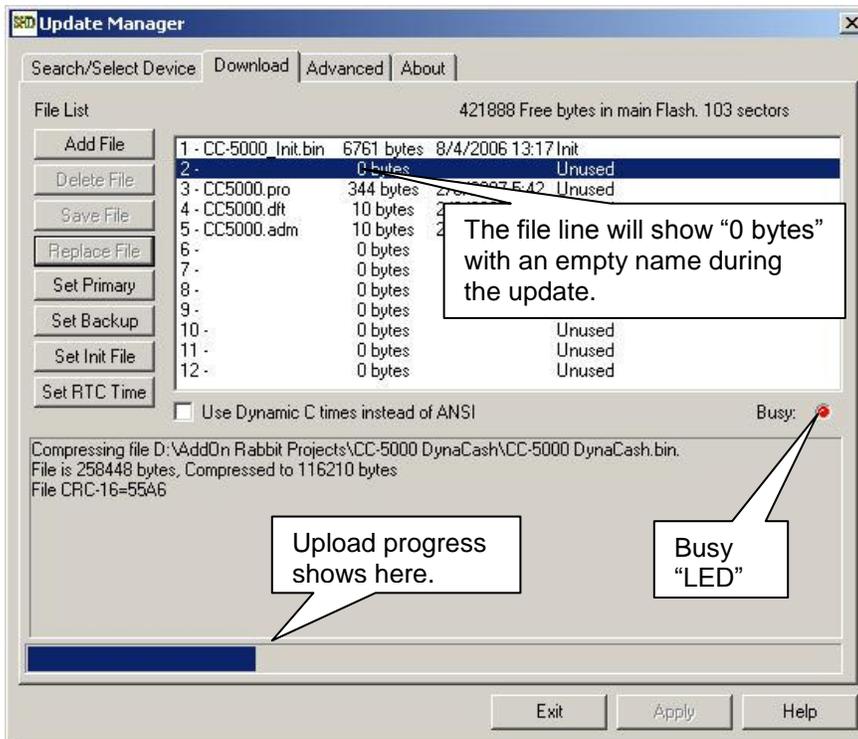


9. **Click on the filename to replace,** then click the **Replace File** button. Be absolutely certain to choose the proper file for replacement! The main program file is in the format “[Machine Type] V5.X.XX.bin” and the line ends with the word “Primary”. It is usually the first file in the list. This is the only file to be replaced during upgrades.

The following dialog will appear. Choose the **.bin** file you want to replace the current program with, then click the **Open** button. Leave the **Compress File** box checked.



Updating of the CC-5000 firmware begins, with the status panel showing progress. The **Busy** “LED” is red while programming, then green when done.



The new file will show where the old one was, and is automatically marked as **“Primary”** since it replaced the original Primary. Verify that the new filename is correct.

10. **Close Update Manager & Cycle CC-5000 Power** (CC-5000 will display “Program is Uploading” message until it is powered off and back on)

11. **Default the CC-5000** (Hold down **C** while powering up till default message appears.) **It is mandatory to default the CC-5000 after loading a new program.** It is possible to set the profiler to do a default if the CC-5000 is going to be profiled next.

### Update Manager Notes:

The Update Manager will show multiple CC-5000's in it's list if there is more than one unit attached to the local network and the units are each in the **"AWAITING PROGRAM"** mode. They **do not** show in the list (and are therefore not accessible for updating) if they are not in the programming mode. Just double click whichever unit you want to program next. After programming a unit, and clicking the **Reset Device** button to reboot it, you'll need to click **Search for Devices** to refresh the units list.



When replacing the Primary file with the Update Manager, you can choose to leave the **Compress File** option in the **Open File** dialog unchecked. The file will then be stored to CC-5000 flash uncompressed. The benefit of storing it uncompressed is at power up, the CC-5000 will be able to load the program from flash to Fast RAM faster – possibly by a few seconds, since it doesn't have to decompress while loading. We will be experimenting with this at Add-On, as the program is gradually getting bigger and therefore slower to load. Production units will likely store the program uncompressed.

## Profiling After a Firmware Upgrade

After updating the Firmware on a CC-5000 an error message of “Invalid Profile” may show on the CC-5000 display. When this occurs it is necessary to profile the CC-5000. It is always recommended to re-profile after a Firmware update even if the error message does not occur. To do this:

Hold down  while powering on the CC-5000

Loading Program Prompt shows

Continue holding  through Power Up messages

If any errors are encountered at start up, **attend to the error, but then quickly go back to holding the Yes key.**

Continue to hold  until the following shows

**PROFILE SYSTEM?**  
**Y / N**

Press  at Profile System Prompt

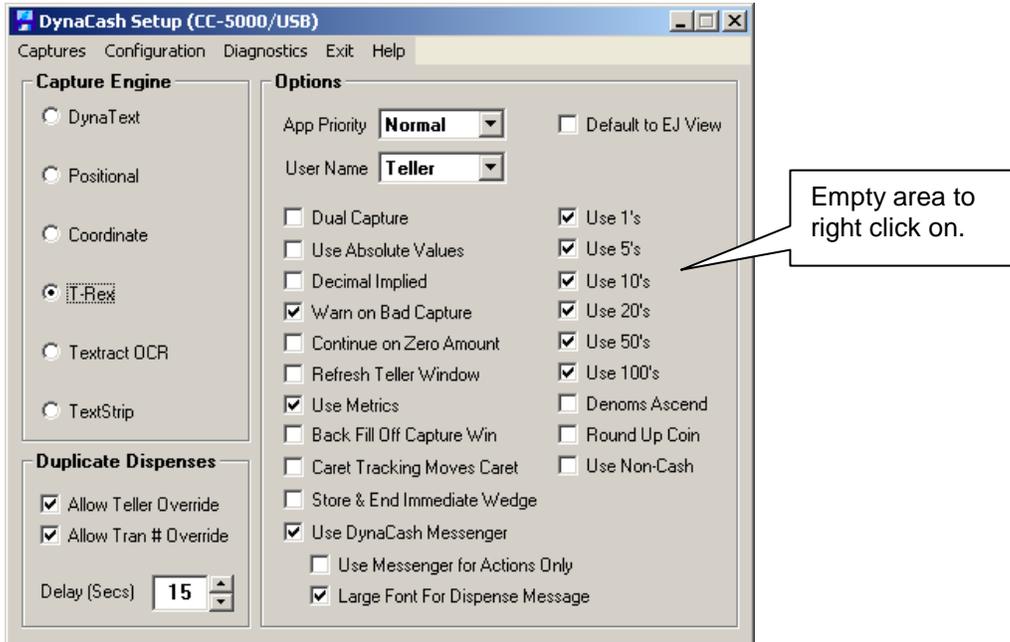
The CC-5000 should show

**AWAITING PROFILE**  
**PRESS C KEY TO CANCEL**

At this point a connection should be established between the CC-5000 and the PC either through LAN or USB. USB is the recommended connection type for profiling after a Firmware update. USB connections require only a driver be installed on the PC and will have no trouble connecting to the profiler. LAN can be used as well but due to Invalid profiles the IP addressing could be corrupt and will not be able to establish a connection on the network. The network settings can be changed by powering on the CC-5000 while holding the Denom key (discussed in depth in the operators manual).

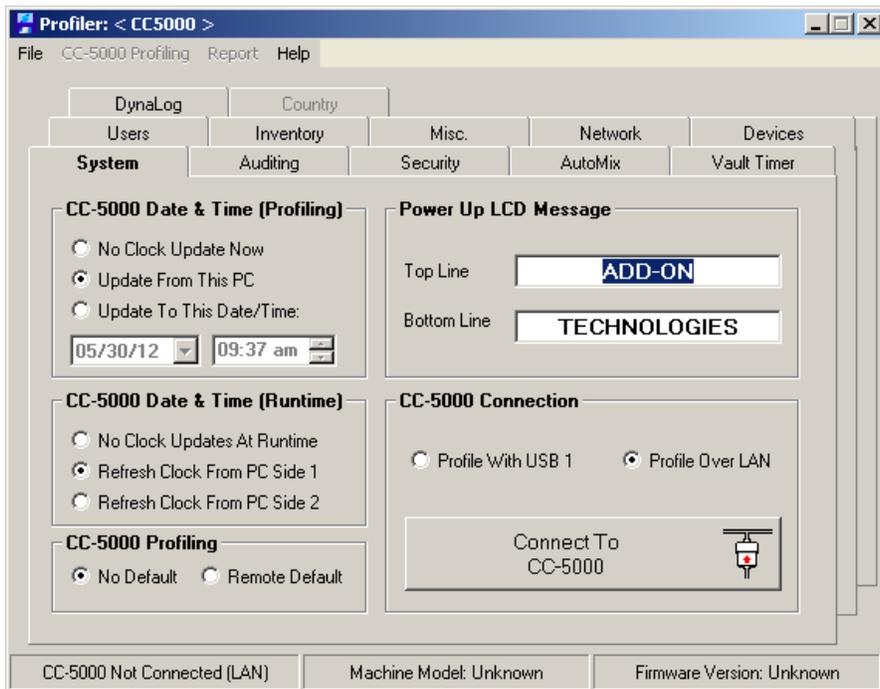
To connect to the Profiler to the CC-5000, get in to the Profiler through DynaSetup. To do this:

Launch the DynaSetup utility from the Start/Programs DynaCash group. If “Password Protect DynaSetup” was checked at installation time, you will be required to enter the admin password. The main window is shown here:



Place the mouse cursor over any empty area of the window and right click the mouse. A popup menu showing “Profile CC-5000” should appear next to the mouse cursor. Click the popup menu. A password entry dialog should appear. Enter either the Default or Admin passwords and press Enter.





This is where you determine the profiling method (USB Side 1 or LAN) to achieve the connection with the CC-5000 to be profiled. Once a connection type is selected, click the Connect to CC-5000 button. It will change to Disconnect from CC-5000 once actually connected. When profiling for the first time after a Firmware update, Remote Default will need to be selected before uploading the profile. Doing this ensures that there are no random variables left in things like teller totals and transaction history.

Make changes to the profile as needed. Refer to the CC5K Profiler document for more information on profiling the CC-5000. After making all changes, go to CC-5000 Profiling and select either Send Profile Only or Send Profile and Users.

Note: If the CC-5000 still has random teller totals and transactions, the CC-5000 will need a C Key Default to correct this. After the Default, Tellers and Managers will need to be entered again.

# CC-5000 over LAN Quick Notes for Workstation Method

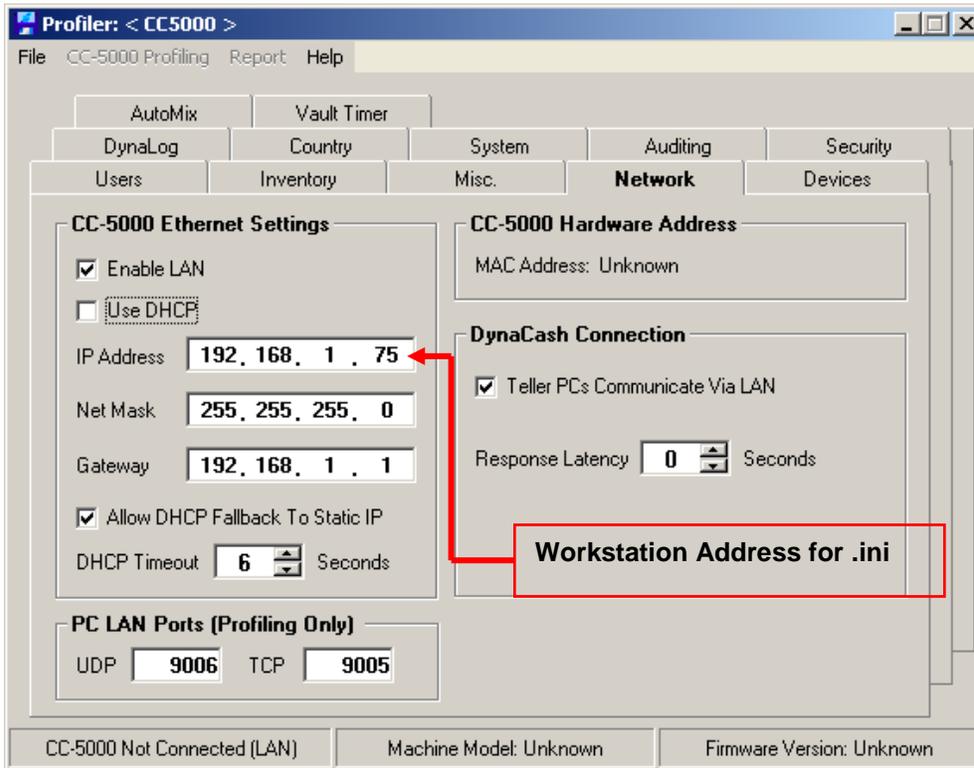
To set up DynaCash for use over LAN with a CC-5000, follow these steps:

## Profile the CC-5000:

Each CC-5000 connected for LAN use by DynaCash must have DHCP disabled and will require a unique static IP address compatible to the subnet the CC-5000 is located on.

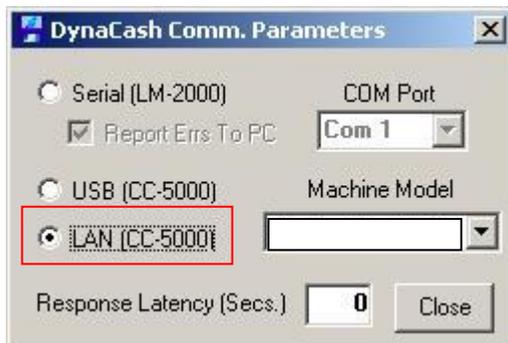
In the Profiler **Network** tab, set up the profile for LAN enabled, DHCP disabled, and give the CC-5000 a valid static IP address, NetMask and Gateway. Check the **Teller PCs Communicate Via LAN** box.

After changing the Network settings, profile the CC-5000 as usual.



## Change DynaCash Setup System Type:

Start DynaCash Setup and open the **System** window from the menu option.

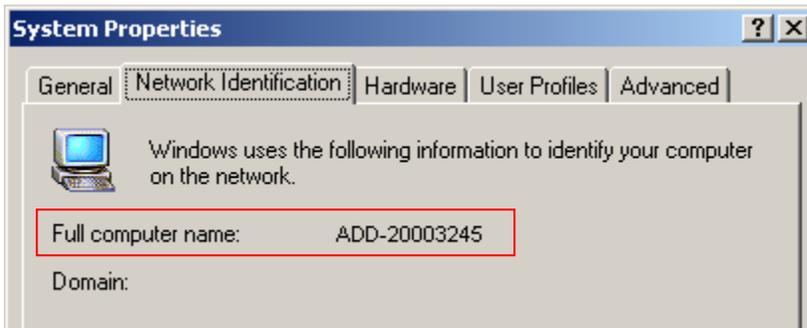


Select the "LAN (CC-5000)" option.

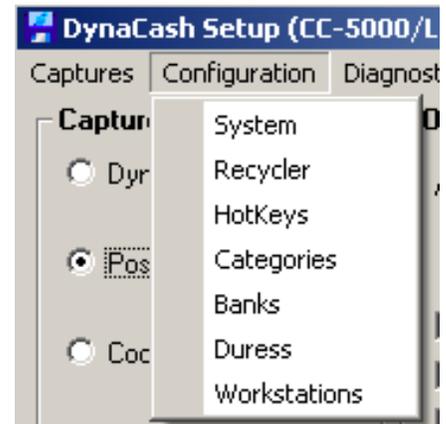
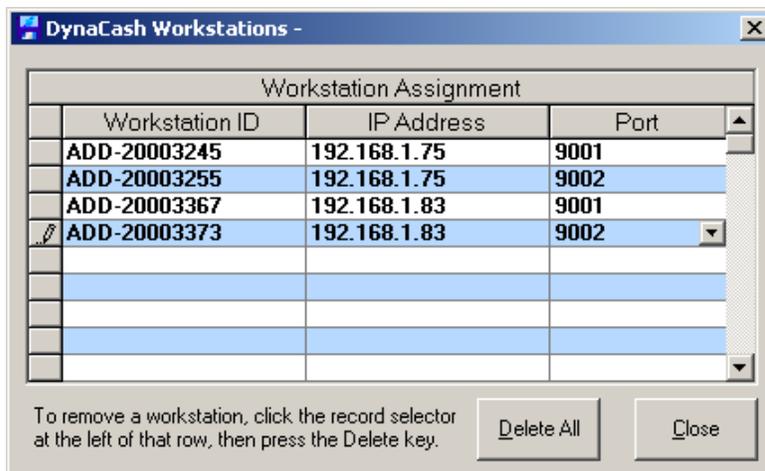
Response Latency is 0 by default. If experiencing command timeouts due to network traffic it may need to be set to a higher value. For example, setting it to 10 would give DynaCash 10 extra seconds to retry to establish communication with the server before it times out and disconnects.

## Modify the Workstations entry in DynaSetup:

Before setting up the workstation section you will need to know the computer names of the workstations on the left and right sides of the dispenser. Look in the computer's system properties under the "Network Identification" Tab for Windows 2000 systems, "Computer Name" for Windows XP/7 systems, or System Info for Wyse terminals.



In DynaSetup under Configuration is the Workstations menu. This is where you will set up what computers connect to what CC-5000 and on what side will they dispense.

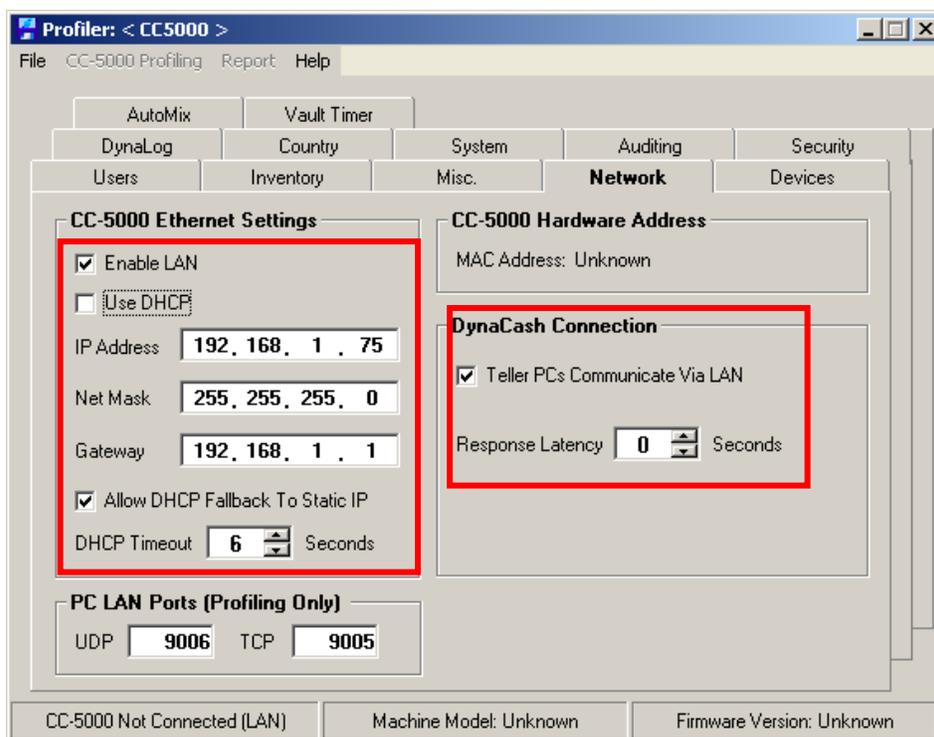


Here you will enter the Workstation name into the Workstation ID field, the IP address of the CC-5000 that workstation should connect to and which port that workstation should use (9001 generally being the left side of the dispenser/recycler and 9002 being the right).

## CC-5000 over LAN Quick Notes for Command Line Method

To set up DynaCash for use over LAN with a CC-5000, follow these steps:

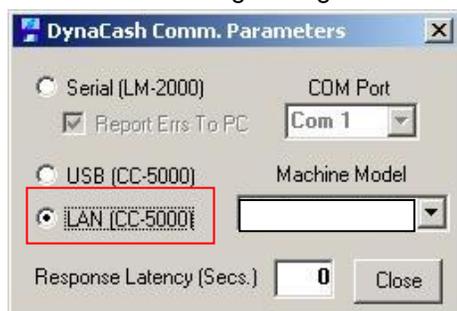
In the Profiler Network tab, set up the profile for LAN enabled, DHCP disabled, and give the CC-5000 a valid static IP address, NetMask and Gateway. Check the **Teller PCs Communicate via LAN** box.



After changing the Network settings, profile the CC-5000 as usual.

In DynaCash Setup, open the Communications window from the menu option.

Select the LAN (CC-5000) option. Leave the Response Latency at 0 unless DynaCash reports command timeouts during testing.



Each workstation will need the command line modified in the DynaCash Runtime shortcut properties.

For DynaCash running locally on workstations (USB), no command line would be used, unless using LAN communications from that PC directly to the CC-5000. For server installs of DynaCash (Citrix, Terminal Services, etc.) the workstation PC's shortcut to DynaCash needs to have the CC-

5000 static IP address and one of the 2 available CC-5000 TCP port numbers added as a command line argument.

The CC-5000 port number to use depends on which side (A or B) of the CC-5000 the workstation needs to sign on to. **For Side A, the port number 9001 must be used. For Side B, use 9002. Using any other port number will result in the connection not being established.** The port number passed via the command line is how commands get steered to the correct side of the CC-5000.

Since the CC-5000 IP address is also a command line argument, one server using one copy of DynaCash can control multiple CC-5000's. The various workstations pass in the proper IP address for the CC-5000 they want to use, via their shortcuts to DynaCash on the server. This way, the single DynaCash.ini file on the server can be shared with everyone, since it doesn't contain the port number or IP address.

**NOTE – Each CC-5000 connected for LAN use by DynaCash must have DHCP disabled and will require a unique static IP address compatible to the subnet the CC-5000 is located on.**

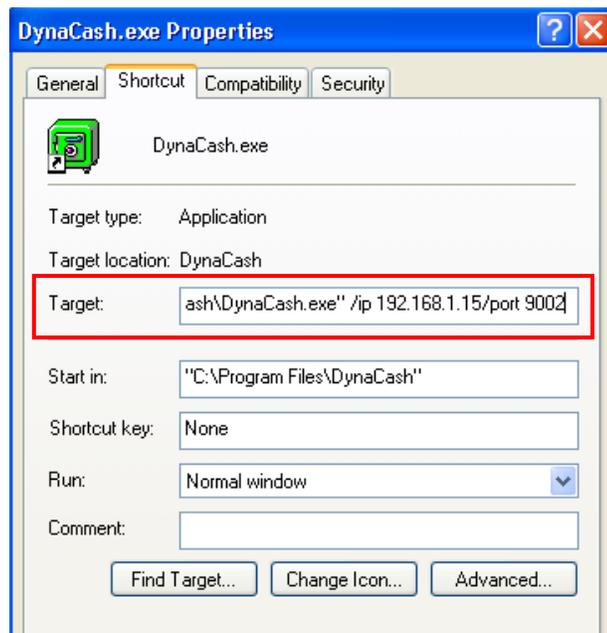
The command line argument to specify the CC-5000 IP address and port is:

**"<path> DynaCash.exe" /ip <IP address in "dot" format> /port <9001 or 9002>**

The "/ip" switch indicates that an IP address will follow. The IP address must be in a format such as "192.168.1.10". Lead zeroes are not allowed. Following is an example of how to launch a server install of DynaCash (from the workstation shortcut "Target" entry) from a workstation meant to be used on Side 2. It assumes that from a workstation perspective, DynaCash is in the M:\Program Files\DynaCash folder, and the CC-5000 has static IP address of 192.168.1.15:

***"M:\Program Files\DynaCash\DynaCash.exe" /ip 192.168.1.15 /port 9002***

**Note: The "/ip" and "/port" switches and their parameters are outside of the quotation marks.**



# Installing DynaCash for Terminal Server and Citrix Environments

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Installing DynaCash on servers is done a bit different from installing it on a local workstation. The main reason is that for clients connecting to the server will not have the proper support files registered for their session.

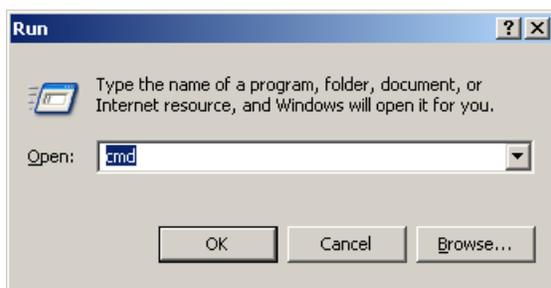
Citrix and Terminal Servers have DynaCash installed the same way; the only difference between the two is how the client connects to the server. Citrix uses an ICA (Independent Computing Architecture) type of connection protocol where Terminal Servers use the RDP (Remote Desktop Protocol) connection protocol.

The reason DynaCash would be installed on a server is generally because that is where the teller application resides. For DynaCash to work properly it needs to be able to get information from the screens of the teller application by being in the same memory space.

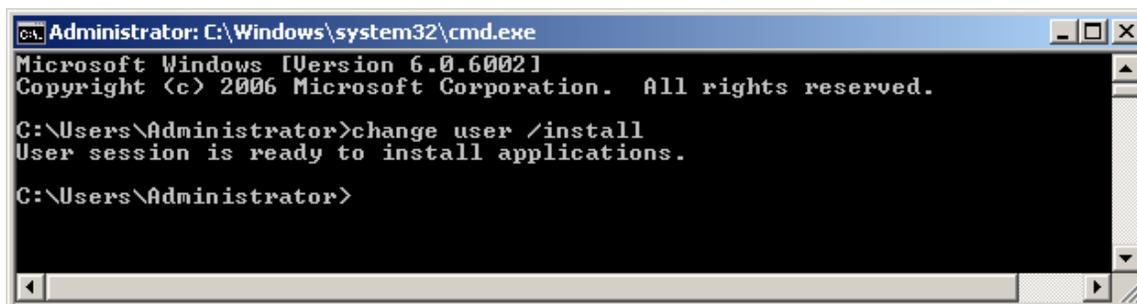
As with any server install, contact the IT in charge of the server before making any changes.

## Installing DynaCash using Install Mode (All Server Operating Systems)

To set the server into install mode, go to the Start Menu and then to Run (or Windows Button + R). In the Run prompt enter cmd and press enter.



This should bring up the Command Prompt. In the Command Prompt enter: **change user /install** and press enter.



If entered correctly a message "User session is ready to install applications" should appear. At this point DynaCash can be installed normally.

Once DynaCash is installed, go back to the Command prompt and enter: **change user /execute** to return the server to normal operations.

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

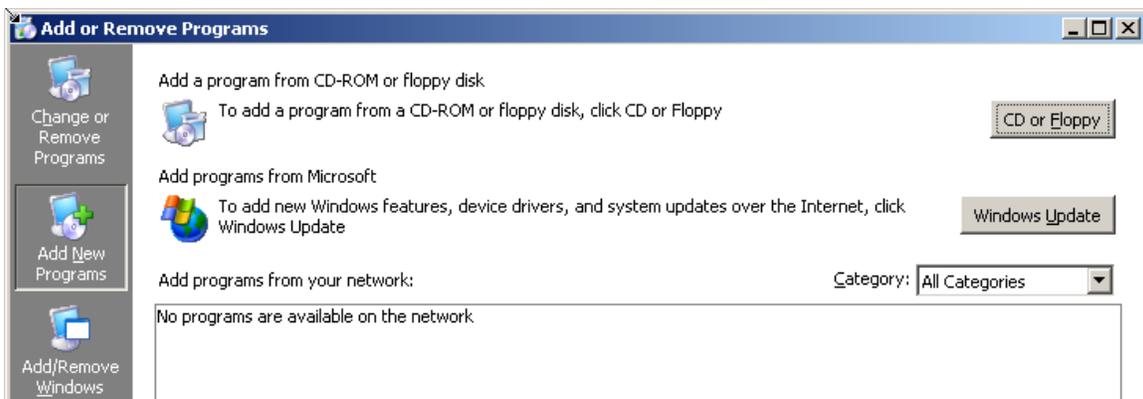
C:\Users\Administrator>change user /install
User session is ready to install applications.

C:\Users\Administrator>change user /execute
User session is ready to execute applications.

C:\Users\Administrator>
```

## Installing DynaCash using Add/Remove Programs (Windows 2000/2003 Server)

To install DynaCash on Windows 2000/2003 Server, Add/Remove Programs needs to be used. To do this, go to Control Panel and Add/Remove Programs.

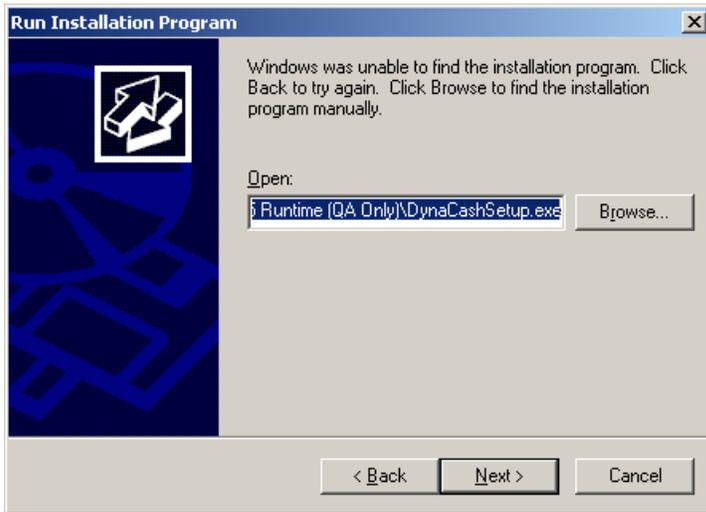


In Add/Remove Programs select the Add New Programs button on the left panel. Once in Add New Programs press the CD or Floppy button.

The Install Program from Floppy Disk or CD-ROM window will appear. On the first screen press Next. At this point the program will check the disk drives on the server for any installation media.

The next screen will ask to browse for the installation media. Click the Browse button and search for the DynaCashSetup.exe file.

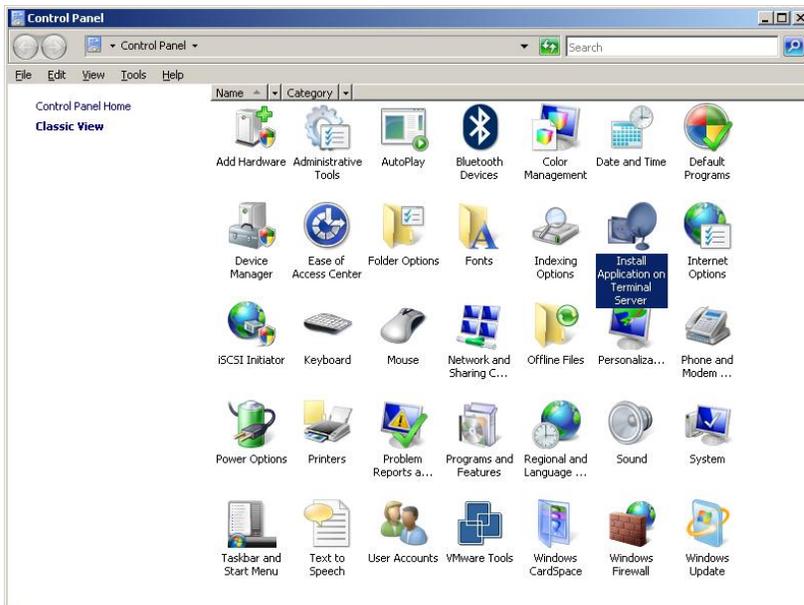




Once the DynaCashSetup.exe file is selected click the Next button and the DynaCash installation should begin. Install DynaCash normally.

## Installing DynaCash using Install Application for Terminal Server/Remote Desktop (Windows 2008 Server)

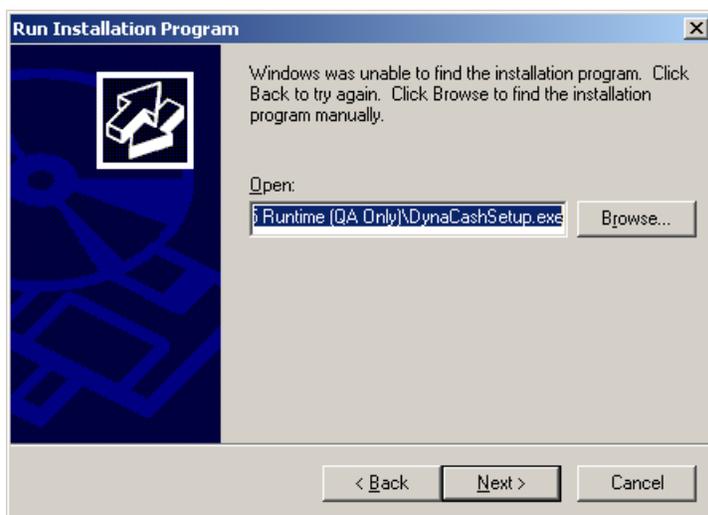
To install DynaCash on Windows 2008 Server, Install Application for Terminal Server/Remote Desktop needs to be used. To do this, go to Control Panel and Install Application for Terminal Server/Remote Desktop.



The Install Program from Floppy Disk or CD-ROM window will appear. On the first screen press Next. At this point the program will check the disk drives on the server for any installation media.

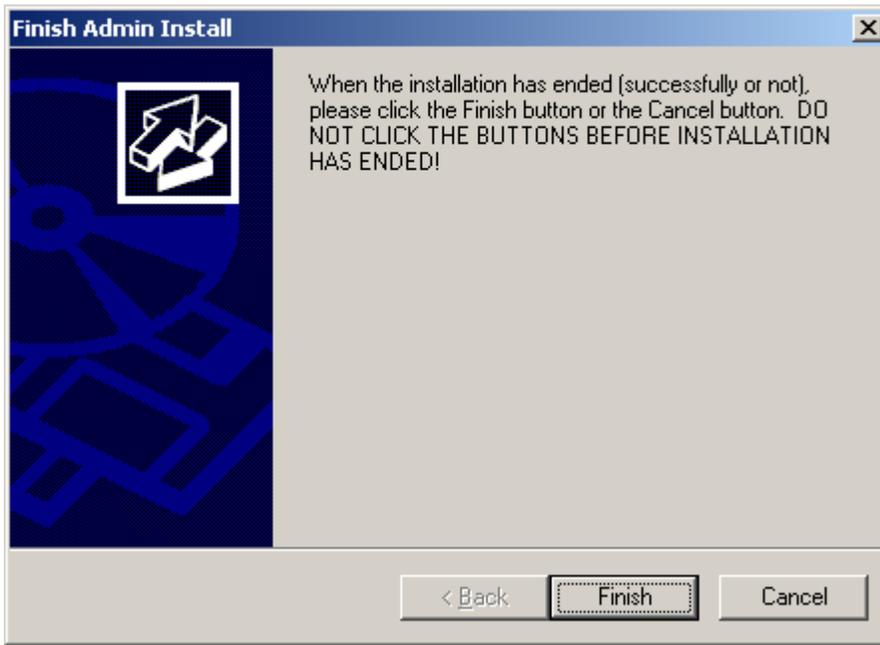


The next screen will ask to browse for the installation media. Click the Browse button and search for the DynaCashSetup.exe file.



Once the DynaCashSetup.exe file is selected click the Next button and the DynaCash installation should begin. Install DynaCash normally.

Once the installation is finished, click the Finish button on the Finish Admin Install window.



Make sure that DynaCash has finished installing before pressing the Finish button or the installation could be corrupted.

## DynaCash.INI Explanation

- [Serial Output] -Serial Communications Setting for Legacy Systems  
Com Port=1 - Com Port used for Legacy Systems
- [App Priority] - Priority of the DynaCash Software  
Priority Class=32 - Can be set to 32 for Normal, 128 for High, or 256 for Real Time
- [HotKeys] -Section for the Various HotKeys DynaCash and DynaSetup uses  
Mixed=122 -Keyboard code for the Mixed dispense hotkey  
MixedS=F11 -Key for the Mixed dispense hotkey  
Nominated=123 -Keyboard code for the Nominated dispense hotkey  
NominatedS=F12 -Key for the Nominated dispense hotkey  
User Setup=119 -Keyboard code for the Capture hotkey  
User SetupS=F8 -Key for the Capture hotkey  
Ignore=122 -Keyboard code for the Ignore for Activator Mode hotkey  
IgnoreS=F11 -Key for the Ignore for Activator Mode hotkey  
ActEntry=13 -Keyboard code for the Entry for Activator Mode hotkey  
ActEntryS=ENTER -Key for the Entry for Activator Mode hotkey  
Emergency=0 -Keyboard code for the Emergency dispense hotkey  
EmergencyS=None -Key for the Emergency dispense hotkey  
Deposit=121 -Keyboard code for the Deposit hotkey  
DepositS=F10 -Key for the Deposit hotkey  
Manual=0 -Keyboard code for the Manual dispense hotkey  
ManualS=None -Key for the Manual dispense hotkey  
ManualDeposit=0 -Keyboard code for the Manual Deposit hotkey  
ManualDepositS=None -Key for the Manual Deposit hotkey
- [Nominateds] -Settings for the Nominated and Manual dispense windows  
Window Left=4950 -The left position of the window  
Window Top=1185 -The top position of the window  
Window Height=6300 -The height of the window  
Window Width=3360 -The width of the window  
Denoms Ascend=False -False: 100's at top. True: 1's at top.  
Use Quantities=False -False: entries are in piece counts. True: entries are in values.  
Use Non Cash=False -Allows for non-cash entries to be made. True: On. False: Off.
- [Denominations] -Defines the Denominations and Values used in DynaCash  
Use Ones=True -Sets the usage of ones in Nominated window  
Use Fives=True -Sets the usage of fives in Nominated window  
Use Tens=True -Sets the usage of tens in Nominated window  
Use Twenties=True -Sets the usage of twenties in Nominated window  
Use Fifties=True -Sets the usage of fifties in Nominated window  
Use Hundreds=True -Sets the usage of hundreds in Nominated window  
Ones Name=1 -Sets the display value for the ones in the Nominated window  
Fives Name=5 -Sets the display value for the fives in the Nominated window  
Tens Name=10 -Sets the display value for the tens in the Nominated window  
Twenties Name=20 -Sets the display value for the twenties in the Nominated window  
Fifties Name=50 -Sets the display value for the fifties in the Nominated window  
Hundreds Name=100 -Sets the display value for the hundreds in the Nominated window  
Ones Multiplier=1 -Sets the actual value for the ones in the Nominated window  
Fives Multiplier=5 -Sets the actual value for the fives in the Nominated window  
Tens Multiplier=10 -Sets the actual value for the tens in the Nominated window  
Twenties Multiplier=20 -Sets the actual value for the twenties in the Nominated window  
Fifties Multiplier=50 -Sets the actual value for the fifties in the Nominated window  
Hundreds Multiplier=100 -Sets the actual value for the hundreds in the Nominated window
- [Bidirectional Options] -Defines communication settings for DynaCash  
Errors Report To PC=True -Sets CC-1000 error reporting to the PC. True: on. False: off

System Type=1 -Sets the type of system. 0=CC-1000, 1=CC-5000-USB, 2=CC-5000-LAN

Machine Type=0 -Sets the Machine type. Manufacturer defines what machines can be used.

Manufacturer=0 -Defines the types of machines available

USB Reset Pipe Retries=250 -This value affects USB when there is interference on the data line.

Use DynaCash Messenger=True -This shows DynaCash messenger ,when True, on all system messages

Use Messenger For Actions Only=False -When True, This will limit DynaCash messenger to only show messages when an action is required.

Response Latency=0 -This setting allows for more time between responses to and from the CC-5000

Allow Disk Writes=True -This allows changes to the MDB file to write to hard disk

Automatic USB Driver Reload=False -This setting will automatically reset the USB port if there is a failure.

Reload Delay=2 -This setting defines how long to wait before reloading the USB drivers

Reload Attempts=3 -This setting defines how many times to attempt to reload the USB drivers

PID=24577 -This is the Product ID for the DynaCash USB driver

[Database] -This section is for the pathing of the MDB file

Database Name=Encore\_Teller\_TREx\_DC2.mdb -This is the path for the MDB used by DynaCash. This supports Local File System (LFS example: X:\databasename.mdb) pathing and Uniform Naming Convention (UNC example: \\Servername\databasename.mdb) pathing.

[Profiling] - These options affect the Profiler found in DynaSetup

Last Profile Path=C:\Program Files (x86)\DynaCash -This is the last location of the CC5000.pro file

Profiler Time Sync Action=1 -Sets the CC-5000 Date & Time option in the Profiler

Last User View=1 -Sets the Users tab to start in Managers (=0) or Tellers (=1)

Profiler UDP Port=9006 -Sets the UDP port to use for connecting to the profiler. Can be set from 1 to 32767.

Profiler TCP Port=9005 -Sets the TCP port to use for connecting to the profiler. Can be set from 1 to 32767.

Connection Type=1 -Sets how the profiler communicates to the CC-5000. 1=USB 2=LAN

[Setup] -This section defines how users are called in DynaCash

User Name=Teller -Sets the user name to Teller or Cashier. Can be set to any 8 character word but will crash DynaSetup if not set to Teller or Cashier.

[Diagnostics] -This section defines the Diagnostic tools in DynaSetup

Save Images=True -Sets whether or not the image is saved when a capture is taken

Image Quality=True -Sets the image quality for saved images. True=High False=Low

Visible LF Chars=False -Set the display of line feed characters in a capture

Diag Save Text=0 -Sets the Capture Diagnostic File Rollover for amount of captured text files to save before overwriting the files

Diag Save Wedge Text=100 -Sets the Wedging Diagnostic File Rollover for amount of wedged text files to save before overwriting the files

Diag Comm Events=False -Logs CC-1000/LM-2000 communication events

Diag Comm Input=False -Logs CC-1000/LM-2000 communication inputs

Diag Comm Output=False -Logs CC-1000/LM-2000 communication outputs

Diag Comm Prop=False -Logs CC-1000/LM-2000 communication properties

Diag Comm Warning=False -Logs CC-1000/LM-2000 communication warnings

Diag Text Num=0 -Last number for the Capture Diagnostic log files

Diag Wedge Text Num=0 -Last number for the Wedging Diagnostic log files

Diag Comm Num=0 -Last number for CC-1000/LM-2000 communication log files

View Images=False -Displays the Capture Image when going into Captures

View Offset=False -Displays the Offset window when going into Captures

Diag Main Day Limit=7 -Sets the Main Diagnostic Day Limit Rollover for amount of main diagnostic text files to save before overwriting the files  
 Diag Force Exit=True -When True, forces DynaCash to close if any dependency file is not found or the incorrect version  
 Diag Save All=False -Sets whether or not to save all Runtime Captures in the diagnostics not just on errors  
 LAN Trace=False -When True, will start a diagnostic file for all LAN communications

[Teller Apps]  
 App ID=0 -This section is used for hard coded databases  
 -The Teller Application ID. This is used to define what hard coding to be used.  
 Clipboard Control=False -Sets if captured text is saved to the clipboard  
 Clipboard Timer Interval=1000 -Sets the amount of time to wait before checking the clipboard for captured information  
 Clipboard Encrypted=True -Sets whether or not the information stored to the clipboard is encrypted  
 BPDR TAB Prefix Count=34 -NOT USED

[Dispensing]  
 Warn On Bad Capture=True -This sets if a message appears when a bad capture is found after hotkeying  
 Back Fill Off Capture Window=False -This sets if DynaCash will Backfill into another window other than the captured window  
 MDI Back Fill=False -This is set if Backfilling into a MDI (multiple document interface) window  
 Round Up Coin=False -This is set to round up coin to the nearest dollar amount

[Deposits]  
 Standalone Mode=False -This section defines various functions of depositing  
 -Sets whether or not a capture is required to do a deposit. When set it will not wedge information into an application.  
 Wedge Zero Values=True -Sets whether or not zeros will be used as placeholders for values with no amounts when wedging deposits  
 Use Wedge Timer=False -Sets a timer for wedging deposits  
 Before Wedge Delay=0 -Sets a delay for after the deposit form has cleared but before wedging text. Value is in seconds and can be set from 1-30  
 Interkey Delay=0 -Sets a delay before each individual character is entered. Value is in milliseconds and can be set from 1-250  
 Interfield Delay=0 -Sets a delay before moving between fields. Value is in milliseconds and can be set from 1-250  
 Fast Wedge At Store And End=True -Not Applicable  
 Deposit Entry Mouse Click=False -When True, will do a mouse click where the caret position has been set under Track Caret for a deposit.

[Security] -This section defines certain security options for DynaCash and DynaSetup  
 Allow Teller Override=True -When True, allows Tellers to override duplicate dispenses  
 Allow Tran Override=False -When True, allows transaction numbers to override a duplicate dispense  
 Interval=45 - Amount of time to wait after a dispense to consider a dispense with the same amount a duplicate dispense  
 Emergency Fund=14 -Quantity of hundreds to dispense when the emergency hotkey is pressed  
 Emergency Value=0 -Amount of money to be automixed when the emergency hotkey is pressed  
 Lock Setup=False -When True, will require an Admin password to enter DynaSetup.  
 When False, will require an Admin password to enter the Profiler.  
 Network Mode=False -Not Applicable  
 Network IP=192.168.1.105 -Not Applicable

[Captures]  
 Capture Engine=7 -This section defines functions of the Captures  
 -Sets the Capture Engine. 0=Positional, 1=Coordinate, 2=TextStrip, 3=Textract, 4=Snag-It, 5=TextGrab, 6=T-Rex, 7=DynaText

Capture Method=0 -Sets the Capture Method for the Capture Engine. 0=Active Window, 1=Rubber Band Mode, 2=Object ID, 3=Object Coordinate  
 Decimal Implied=False -When True, any amount captured will add a decimal place two characters into the amount. Example: 1490 will be 14.90  
 Dual Capture=False -Works with T-Rex, TextGrab, and Textract. When True, will capture the screen twice to ensure nothing changed.  
 Use Absolute Values=True -When True, any negative amount found will be considered a positive amount  
 Accept Empty=False -When True, if a zero amount is found during a capture DynaCash will keep searching its captures for the proper capture  
 Redraw Teller Win=False -When True, will refresh the active window before capturing  
 Disable Font Smoothing=True -When True, will ensure Font Smoothing is turned off

[Activator] -This section is the setting for Activator Mode  
 Class Name=Button -This defines the class name to be used in Activator Mode. Button is usually the default.

[Advanced] -This section defines the more advanced options for DynaCash and DynaSetup  
 Specifics Show Delay=500 -Delay amount between when the hotkey is pressed and when the Specifics screen appears  
 Key Hook XTask Timeout=5000 -Sets the amount of time in milliseconds after a hotkey stalls to return control to DynaCash  
 Key Hook Post On Freeze=False -Not Used  
 Key Hook Post On Freeze Max=20 -Not Used  
 Key Hook Prevent False Duplicates=False -When True, prevents keyhook event from firing twice  
 Message Hook XTask Timeout=5000 -Sets the amount of time in milliseconds after a Activator hotkey stalls to return control to DynaCash  
 Message Hook Post On Freeze=False -Not Used  
 Message Hook Post On Freeze Max=20 -Not Used  
 MDI Class Name=MDI -Defines the MDI Class name. Only used in DynaSetup.  
 Allow Specifics Tabbing=True -When True, allows tabbing between fields in the Specifics window  
 Accept Key For Manual Entry=13 -This will change the accept key for entering amounts in the Manual Specifics window. 13=ENTER, 9=TAB  
 Click In Force To Front=False -When True, this will do a mouse click on the window during a wedge to ensure the window is active  
 Task Hook Window Caption= -Adding a window caption to this entry will make DynaCash only attempt captures when it finds that window caption

DynaText Write Native=True -This is for an upcoming DynaText wedging method  
 Force Coin Decimal=False -When True, forces a decimal into the wedged text.

[Forms] -This section sets the various attributes for the window forms  
 Deposit Window Left=1965 -The left position of the deposit window  
 Deposit Window Top=1410 -The top position of the deposit window  
 Messenger Window Left=2385 -The left position of the messenger window  
 Messenger Window Top=2700 -The top position of the messenger window  
 Busy Window Left=1875 -The left position of the busy window  
 Busy Window Top=2970 -The top position of the busy window  
 StringCapture Window Width=9135 -The width of the String capture window  
 StringCapture Window Height=7470 -The height of the String capture window  
 StringCapture Maximized=True -When True, this sets the String capture window size to maximum  
 UserSetup Window Width=7785 -The width of the User setup window  
 UserSetup Window Height=7575 -The height of the User Setup window  
 UserSetup Maximized=True -When True, this sets the User setup window size to maximum  
 Journal Window Left=1425 -The left position of the journal window  
 Journal Window Top=1305 -The top position of the journal window

[TextStrip] -This section sets specific attributes for TextStrip

TSSetup Window Width=24240 -The width of the TextStrip window  
 TSSetup Window Height=13140 -The height of the TextStrip window  
 TSSetup Window Maximized=True When True, this sets the TextStrip window size to maximum  
 TSSetup Window Top=-120 -The left position of the TextStrip window  
 TSSetup Window Left=-120 -The top position of the TextStrip window  
 TSSetup Invert=False -When True, changes the color to the opposite of the first pixel found when creating capture area boxes.  
 TSSetup Labels=True -When True, displays the names for the capture area boxes  
 TSSetup MagInvert=True -When True, changes the color of the reticule for the magnifier to the opposite of the first pixel found  
 TSSetup FontX=1560 -The left position of the Font window  
 TSSetup FontY=2565 -The top position of the Font window  
 TSSetup MagX=2865 -The left position of the Magnifier window  
 TSSetup MagY=3285 -The top position of the Magnifier window  
 TSSetup BoxDetect=False -When True, this can drill down to find the amount only if the background color of the window and the background color of the box the amount is found in are the same  
 TSSetup BiColor=False -When True, will help grab the amount when the pixel count of the amount is higher than the background of the amount field.  
 Runtime Deposits Steal Focus=True -When True, hides the blinking caret when capturing Deposits in the runtime  
  
 ClearType Fonts=False -Set to True when capturing against a window that has ClearType turned on  
 ClearType Luminance=495 -Omits colors found in the aliasing of ClearType fonts for any color above the number listed.  
  
 [TextGrab] -This section sets specific attributes for TextGrab  
 Capture Timeout=350 -Amount of time in milliseconds before TextGrab will timeout trying to get a capture  
 Enable Captures=True -When True, allows for using the TextGrab engine  
  
 [Metrics] -This section allows for turning on Metrics  
 Use Metrics=False -When True, turns Metrics on which fixes issues when moving databases to other computers with different themes.  
  
 [Electronic Journal] -This section sets specific attributes for the EJ window  
 Journal Font=2 -Sets the font type for the EJ window. 0=Courier, 1=Courier New, 2=Fixed Sys, 3=Lucida Console  
 Journal View=1 -Sets what information is being viewed in the EJ window. 0=Teller Totals, 1=Inventory Only, 2=Last 10 Transactions, 3=Activity Report  
 Default To EJ View=False -When True, shows the EJ window after logging into DynaCash and any time DynaCash is selected from the taskbar  
  
 [Banks] -This section sets the usage of Banks  
 Use Banks=False -When True, allows for the usage of Banks. Banks values have to be set in DynaSetup and allow for specific amounts of denominations to be dispensed when the Manual Hotkey is pressed.  
  
 [Categories] -This section sets the usage of Categories  
 Enable Deposit Categories=False -When True, allows for usage of Categories. Categories allow for deposits to be categorized by the specified Category Name.  
 Category 1 Name=DepositCategory  
 Category 2 Name=  
 Category 3 Name=  
 Category 4 Name=  
 Category 5 Name=  
 Category 6 Name=  
 Category 7 Name=  
 Category 8 Name=

Category 9 Name=

[Drawer Coin] -Whole Section Not Applicable  
Prompt User=False

[Msg Tips] -This section is for message tips to show in DynaSetup for String Capture  
methods

Show 1=False -Shows the tip for adding new captures

Show 2=False -Shows the tip for capturing MDI windows

Show 3=False -Shows the tip deleting triggers

[Workstations] -This section is the list for Workstation entries when using DynaCash in LAN  
mode in a Terminal Services environment

Workstation1=WindowsPC|192.168.1.1|9001

Workstation2=

Workstation3=

Workstation4=

Workstation5=

Workstation6=

Workstation7=

Workstation8=

Workstation9=

Workstation10=

Workstation11=

Workstation12=

Workstation13=

Workstation14=

Workstation15=

Workstation16=

Workstation17=

Workstation18=

Workstation19=

Workstation20=

[NCI] -Whole Section Not Applicable

Workstation ID=Default

UseBestFitMix=True

Tier1CutOff=200

Tier2CutOff=600

TellerSide=L

TransactionID=1

CurrencyCode=00840

CurrencyText=USD

CoinCurrencyCode=00840

NCIVersion=4

Coin Dispenser=True

Cached Contents=False

Journal Disk Writes=True

Hide Auxiliary Func=False

Lock Timeout=1

Teller Delay=1

Launch Teller=False

ManualDeposit=0

Auto Logoff Teller=True

Ignore Coin=False

[NCI Duress] -Whole Section Not Applicable

DuressAmount=100

[Version] -This section lists the version of the DynaCash INI file  
INI Version=2.1.5 -Current INI version

# DynaLog Electronic Journal Installation & Tech Notes

## Product Summary

The DynaLog Electronic Journal Server and Viewer applications may be installed on any number of PC's with no license cost. They are a free optional extension to the DynaCash system, and are shipped with each system on the DynaCash CD.

CC-5000 keypads send their print output over the network to the DynaLog Server, which creates a unique, dated file for each keypad. The DynaLog Viewers provide a way to look at the EJ files in the same format that the data would print to a journal printer (40 column or 48 column). Neither the Server or Viewers are able to modify or delete the files – that can only be done through Windows Explorer. The log files can also be viewed using NotePad with the Courier New font. A typical scenario of using DynaLog with NotePad would be if the Viewer app was omitted, and the CC-5000 had a hardcopy journal printer. In this case the Server is just collecting the files for long term history, where the files need to be looked at only on rare occasion.

When using DynaLog, the CC-5000 can be used with a journal printer (Citizens IDP-3550 impact or Star TSP-600 thermal series) or it can be configured in the DynaSetup Profiler for “Not Installed”. If a printer is not installed, DynaLog provides a completely paperless solution for tracking DynaCash system activity.

The DynaLog Viewer includes a Print Preview feature which lets the user then print EJ to standard 8 ½ x 11 PC printers. It also has a file export capability so EJ files can be saved in a number of formats and then emailed, etc. to other locations. This can be convenient when any kind of system balancing issue arises – no more “lost audit tape” scenarios!

The Server install executable is named EJServerSetup.exe and is found in the setup CD root folder. The DynaLog Server installs as a Windows service and has no user interface. It is pre-configured to start up automatically when Windows boots up. The Server runs in the Local System account so the server PC doesn't require a user logon – it can stay at the CTRL + ALT + DEL Windows logon window.

Theoretically, the server can support any number of CC-5000 and DynaLog Viewer clients, though as the number of clients increases the server load goes up so this would be determined by trial-and-error. The server can be installed on either a branch or corporate server, or on a branch manager's PC (if serving just that branch). The server PC should be in a secure area since the DynaLog EJ file archive is created in a folder on the server.

## Minimum Requirements

CC-5000 program version 5.0.38 or higher. Earlier versions don't support DynaLog. CC-5000s with version 5.0.42 or higher firmware version will need a minimum of V1.0.0.4 DynaLog Server for proper operation.

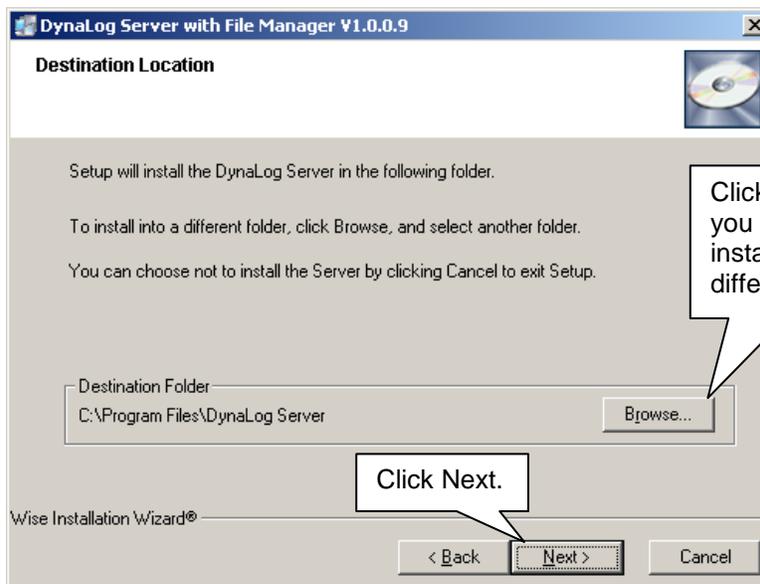
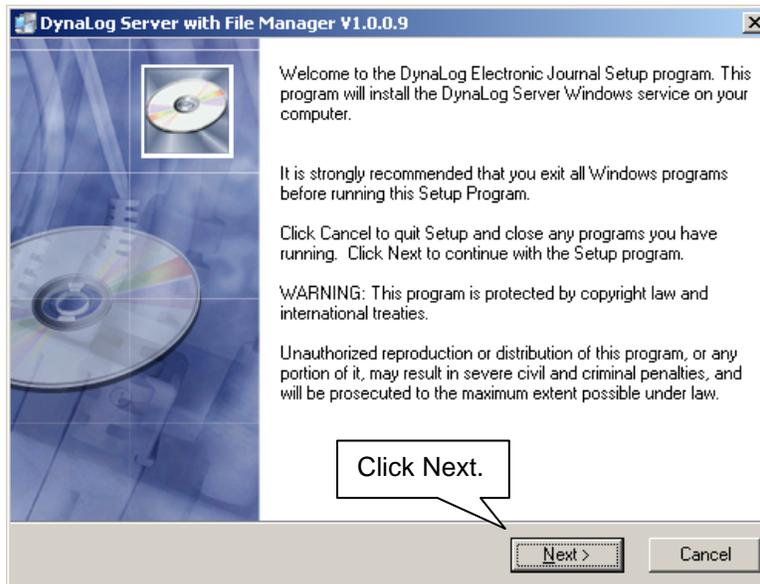
**PC Hardware:** 1 GHz CPU, 512 MB RAM, 2 GB disk space, LAN connection, 800 x 600 resolution monitor.

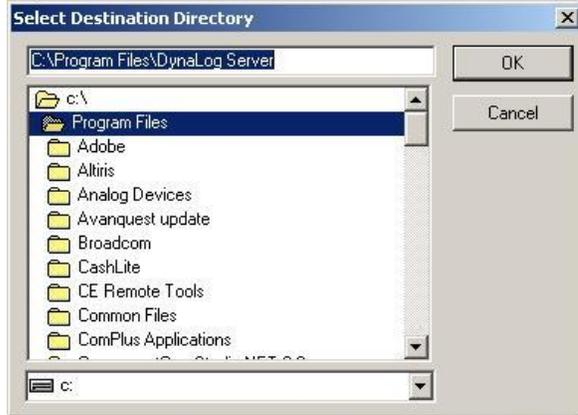
**PC Software:** Windows XP (SP3) or higher OS, and .NET Framework 4.0 Service Pack 1. The .NET Framework 4.0 Redistributable requires at a minimum Windows Installer V3.1 to install the Framework. The DynaCash CD has a folder named **Windows Installer V3.1** with the Installer setup file **WindowsInstaller-KB893803-v2-x86.exe**. Then the **wic\_x86\_enu.exe** found in the Windows Installer V3.1 folder will need to be installed. The .NET Framework is on the CD in the **DotNet Framework V4.0 SP1** folder, with the file name **dotNetFx40\_Full\_x86\_x64.exe**.

# DynaLog Server Installation

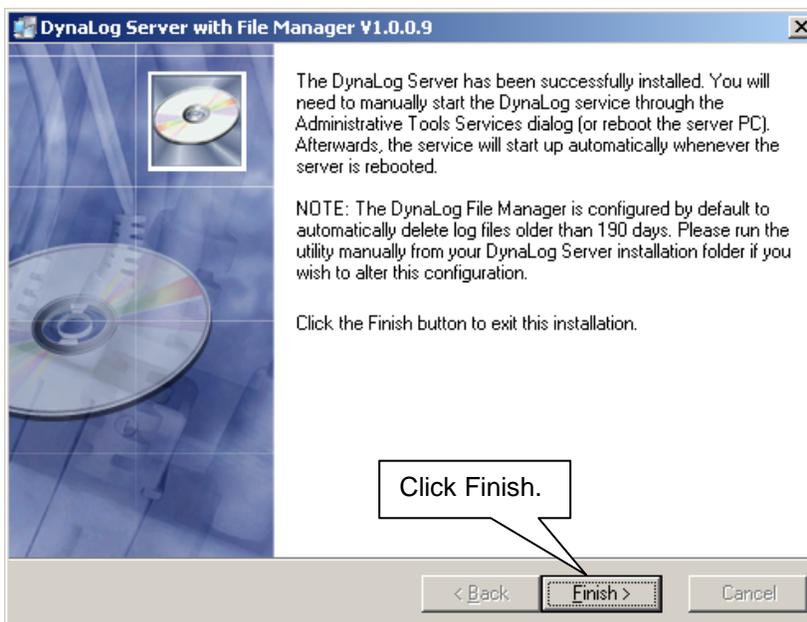
- **VERY IMPORTANT** – any PC acting as the server for DynaLog will need to have DHCP disabled in its Network Settings and will require a static IP address.

Install the .NET Framework 4.0 Redistributable (double click the **dotNetFx40\_Full\_x86\_x64.exe** file and follow the prompts). Then launch the **EJServerSetup.exe** file by double clicking on the file name. The Wise Installer will initialize. Follow these prompts to install the server:





If browsing to use an install folder other than C:\Program Files\DynaLog Server, type in a new valid folder name in the dialog shown below, then click the OK button. You will then click the Next button on the **Destination Location** dialog.



You will probably be prompted to reboot the system. Do not reboot until the File Manager has been configured.

DNS Client	Resolves a...	Started	Automatic	Network S...
DynaLog		Started	Automatic	Local System
Error Reporting Ser...	Allows erro...	Started	Automatic	Local System

You can manually start the service in the Services window (the service doesn't start on its own right after installation, but it is set to start up at each reboot).

The next step will be to check the DynaLog.ini file for the proper settings. ***If you edit DynaLog.ini, you must stop, and then restart the DynaLog Server Windows service in the Services window so the server can apply the settings.***

Use Windows Explorer to find the DynaLog Server install folder, and then double click on DynaLog.ini in that folder to open the configuration settings in NotePad. The LAN settings section will require a Server Port number change if the default port 9007 is already in use by another application. A conflict of this type would report to the server's Application Event Log as a DynaLog error. Please refer to the document **DynaLog EJ Server EventLog.doc** – after starting the DynaLog service you should see the following in the Event Viewer Application log, as a DynaLog event entry:

**Event Type:** Information

<b>Event Source:</b>	<b>DynaLog</b>	
<b>Event Category:</b>	<b>Information</b>	
<b>Event ID:</b>	<b>12</b>	
<b>Date:</b>		<b>&lt;date&gt;</b>
<b>Time:</b>		<b>&lt;time&gt;</b>
<b>User:</b>		<b>N/A</b>
<b>Computer:</b>	<b>&lt;computer name&gt;</b>	
<b>Description:</b>		

**The DynaLog Server has begun listening for clients on port: 9007**

If you see an error for DynaLog in the Application log like this:

<b>Event Type:</b>	<b>Error</b>	
<b>Event Source:</b>	<b>DynaLog</b>	
<b>Event Category:</b>	<b>Fatal Error</b>	
<b>Event ID:</b>	<b>13</b>	
<b>Date:</b>		<b>&lt;date&gt;</b>
<b>Time:</b>		<b>&lt;time&gt;</b>
<b>User:</b>		<b>N/A</b>
<b>Computer:</b>	<b>&lt;computer name&gt;</b>	
<b>Description:</b>		

The DynaLog Server Listen method encountered an error in InitServer(). The error is: **System.Reflection.TargetInvocationException: Exception has been thrown by the target of an invocation. ---> System.Runtime.InteropServices.COMException (0x800A2740): Connect, Listen or Open method failed. Only one usage of each socket address (protocol/IP address/port) is normally permitted. This error occurs if an application attempts to bind() a socket to an IP address/port that has already been used for an existing socket, or a socket that wasn't closed properly, or one that is still in the process of closing. Etc.,** it means that port 9007 is already in use by another program and you'll need to change the Server Port to an available port number. You can change the port in the DynaLog.ini Server Port setting shown here:

**[LAN Settings]**  
**Server Port=9007**  
**Outgoing Ping Interval=15**

Replace the 9007 with the new port number (there is no space between the "=" and the left digit of the port number).

The **Outgoing Ping Interval** may be of interest. The outgoing ping interval can be a value of 10 to 60 (seconds) – the default is 15 seconds which should be a good value for most installations. Shorter ping intervals cause the CC-5000 keypad to test for a ping from the server more often, and also cause the server to ping the CC-5000 more often (the server expects a reply to each ping, otherwise it closes the TCP connection to the CC-5000). This is the only way the server has to know if a CC-5000 got powered off, since the keypads don't properly close their LAN connections like a PC app does when they suddenly lose power. The CC-5000 uses the incoming pings to know that the server is still listening, and if a ping is missed the CC-5000 will lock down for security reasons (especially important if you're not using a printer with the system). Lower ping intervals cause more pinging and thus more LAN traffic, but the packets are very small (one character ping and one character response, plus the normal LAN header/checksum stuff). A lower value does let the CC-5000 reconnect to the server quicker (after keypad power is cycled) since the server will test for the CC-5000 more often and can detect a no response to the ping faster. That lets the server close the old connection so the CC-5000 can open a new one when powering back on. This really matters only for quick power cycling of the CC-5000. Having the keypad off at night and powering it on in the AM should open a server connection immediately.

As a reminder, DynaLog.ini settings only get read in when the DynaLog server starts up (as a Windows service) so any changes to the ini file will need the service stopped (**not paused**) and

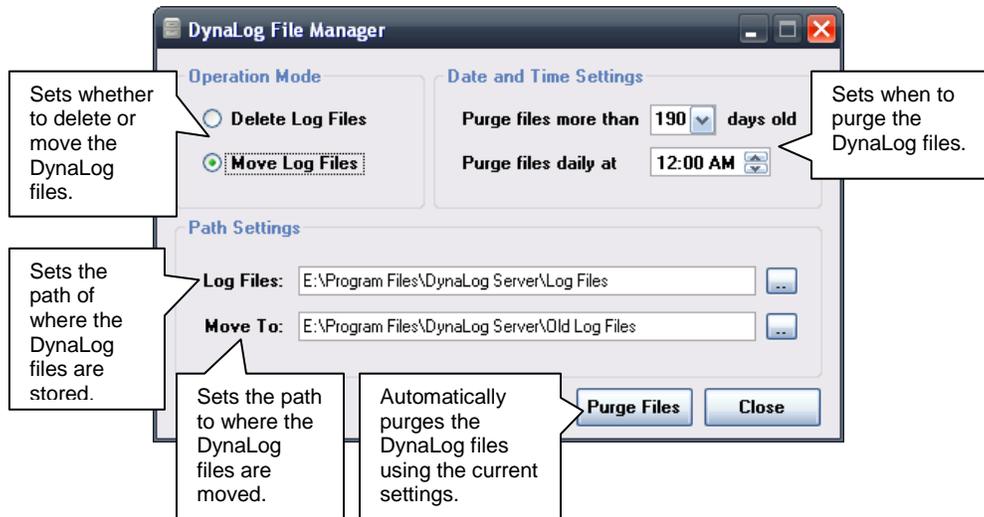
restarted. The other DynaLog.ini settings should be left at their default values. Remember to do a **File|Save** for the ini file after changing anything.

When installing the Server, the Wise Installer creates an empty Log Files sub-folder for the main Server folder. All EJ files will subsequently be created and stored in the Log Files folder. These files can be managed using the DynaLog File Manager.

EJ files have a format like these sample file names:

DynaLog[150-RBU]05252011.txt - RBU connected to CC-5000 station ID 150 on 5/25/2011

The DynaLog File Manager controls how older log files are dealt with. The DynaLog file Manager is located in the DynaLog Server folder in Program Files. Run the DynaLog File Manager.exe.



### Operation Mode

Delete Log Files – DynaLog Server will automatically delete the log files at the specified time and age as defined by the Date and Time Settings.

Move Log Files – DynaLog Server will automatically move the log files at the specified time and age as defined by the Date and Time Settings.

### Date and Time Settings

Purge files more than XXX days old – Determines how old the log files must be before they are deleted or moved. Can be set to 190,175,160,145,130,105,90,75,60,45,30,or 15 days.

Purge files Daily at XX:XX – Set at what time the log files are deleted or moved.

### Path Settings

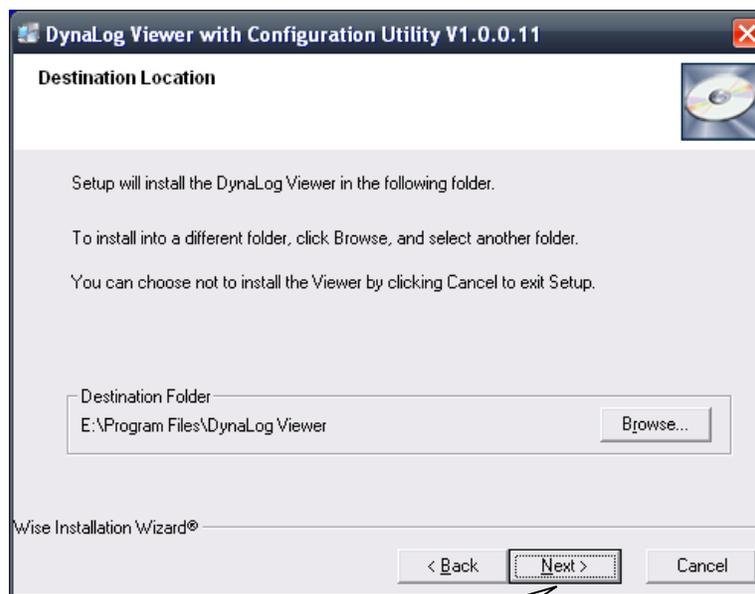
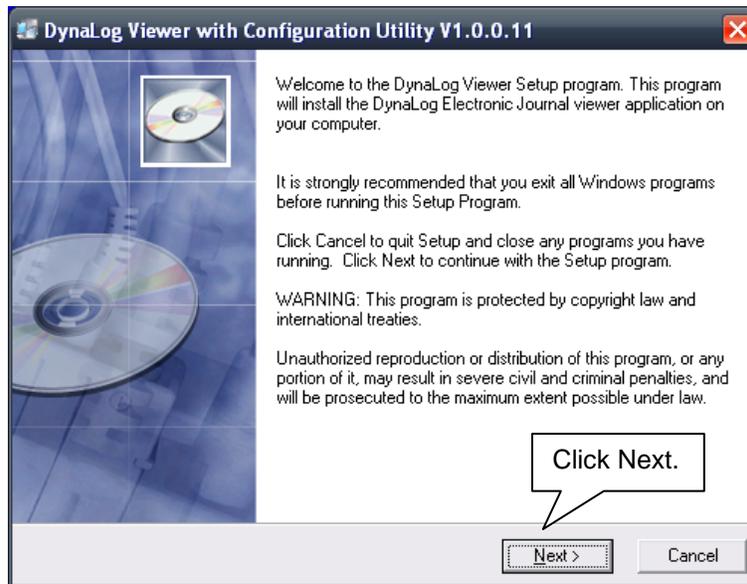
Log Files – This is the path that the DynaLog log files are stored.

Move To – When Move Log Files is selected, this is the path that the log files will be moved to.

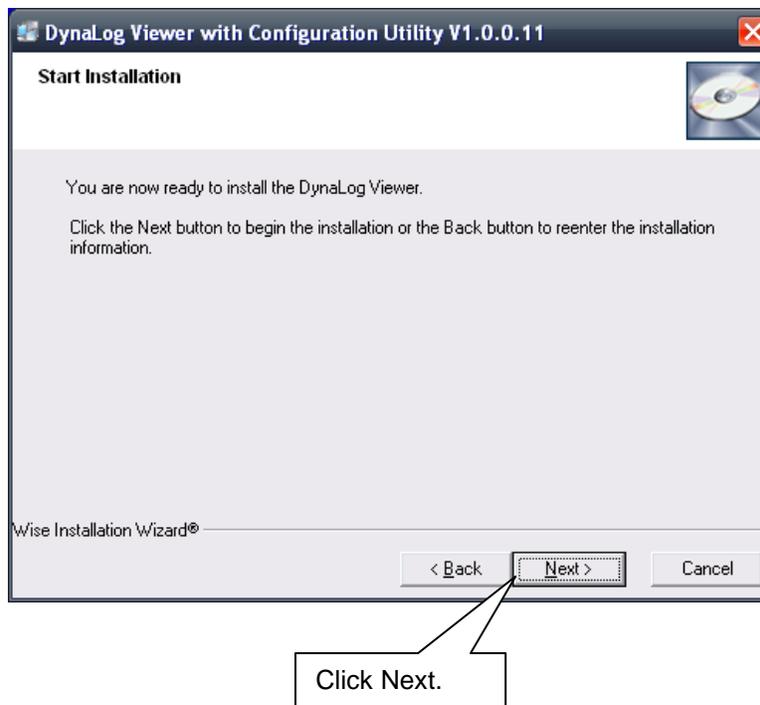
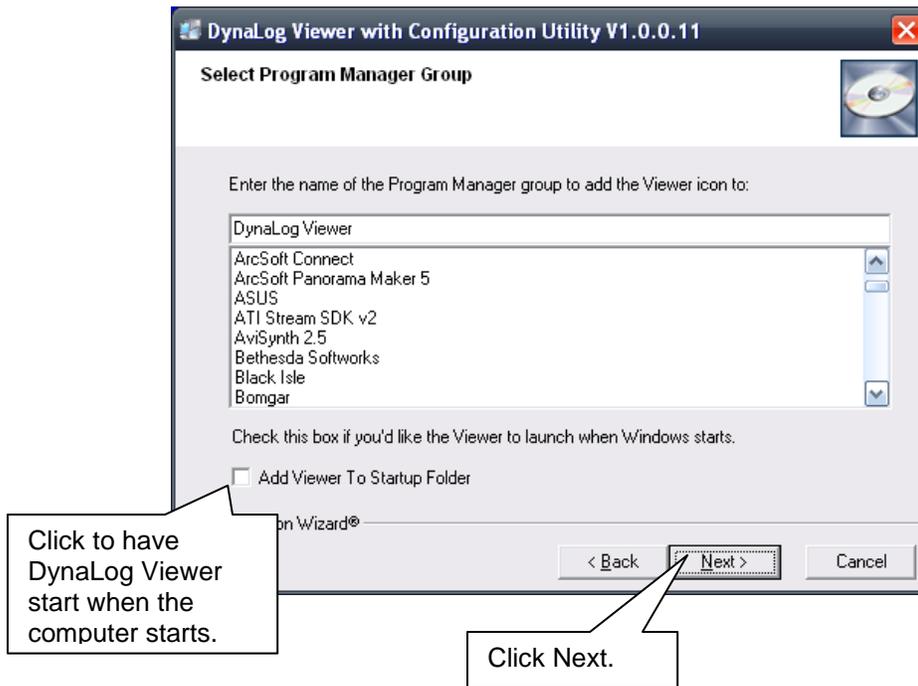
After making any changes to the DynaLog File Manager the DynaLog service will need to be restarted. The DynaLog File Manager uses the same service as the DynaLog Server.

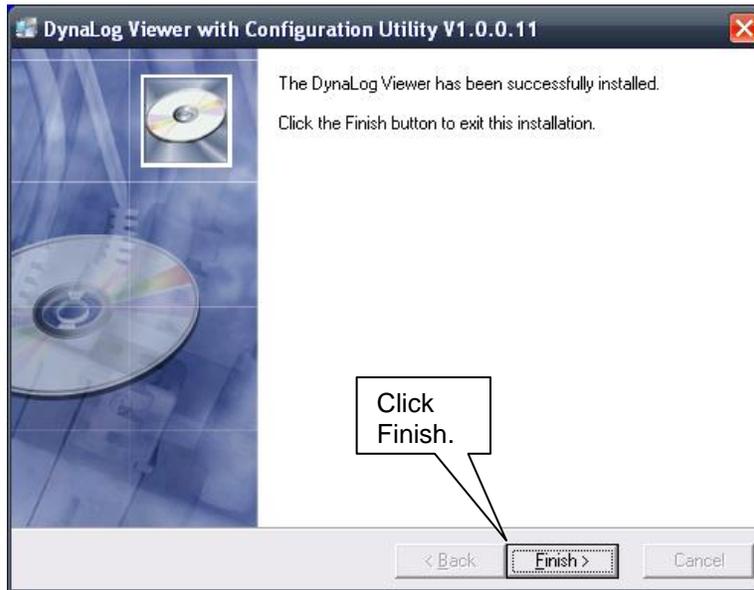
# DynaLog Viewer Installation

Install the .NET Framework 4.0 Redistributable (double click the **dotNetFx40\_Full\_x86\_x64.exe** file and follow the prompts). Then launch the **EJViewerSetup.exe** file by double clicking on the file name. The Wise Installer will initialize. Follow these prompts to install the viewer:



Click Next to install into the default folder or click Browse to choose your own folder, then click Next.





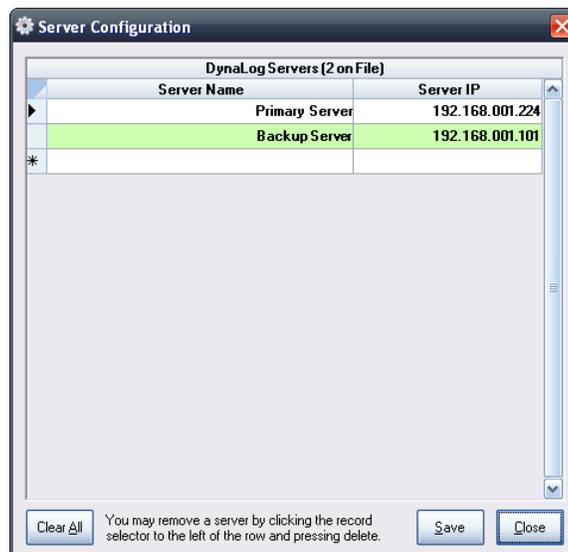
The Viewer shortcut will be visible on the Windows Desktop and will also be in the chosen Program Group in the Start Menu - All Programs list.



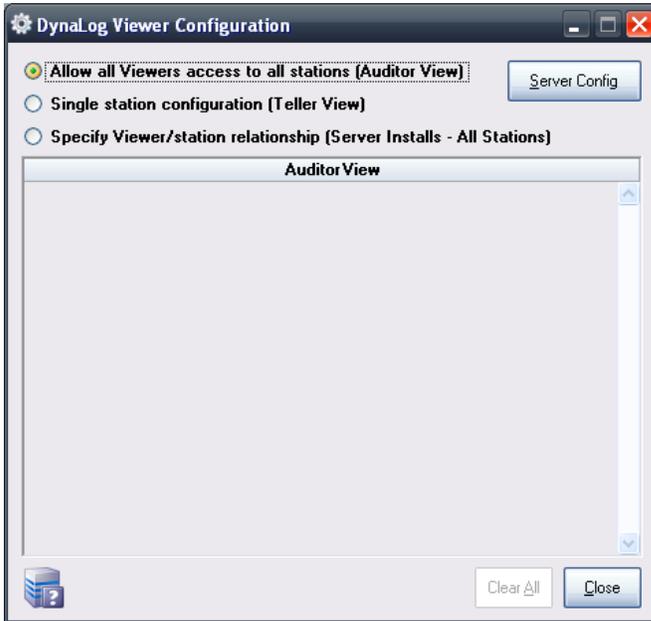
The Viewer configuration utility will require some settings to be changed. Use Windows Explorer to find Viewer Config.exe in the Viewer install folder, then open by double clicking it(if you started the Viewer after installing it, exit the Viewer now).

### Server Configuration

Pressing the Server Config button at any time while in the Viewer Config program will bring up the Server Configuration Menu. This allows entries of the available DynaLog Servers and nicknames for the corresponding servers that can be viewed by anyone using the DynaLog Viewer. Up to 25 servers can be listed. Nicknames can be anything descriptive such as "Primary Server", "XYZ Mall Branch Server", "Region 4 Server", etc. Up to approximately 40 characters can be used for each nickname.



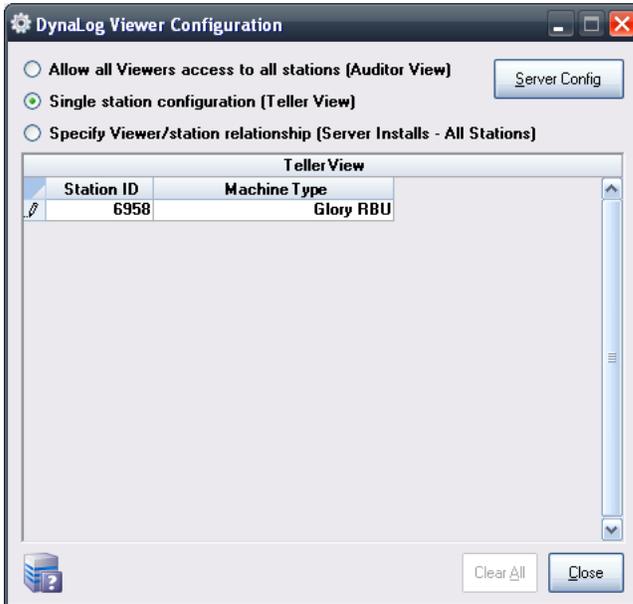
## Auditor View



When Auditor Mode is selected the Viewer shows a tree view type of file index showing all files for all machine types and all dates. The user can click any date to view the EJ for that station and date.



## Teller View



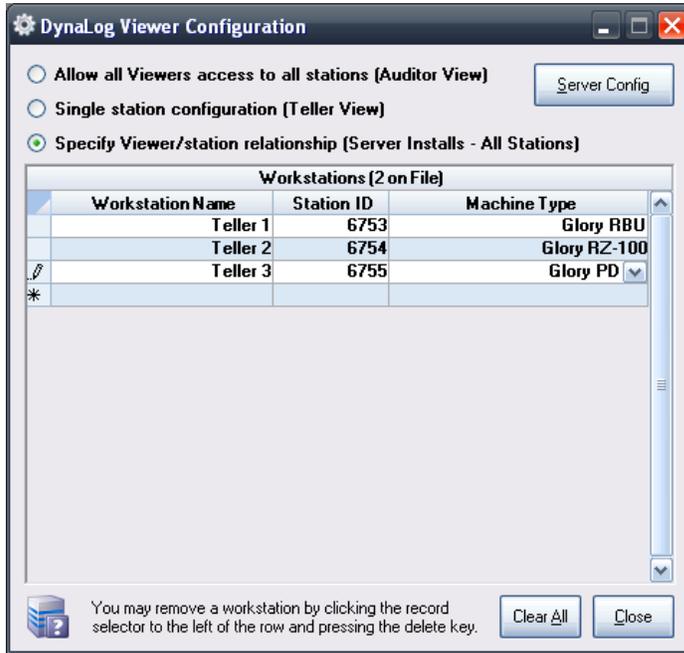
Teller View is initiated when selecting Single station configuration (Teller View). An entry of a Station ID and a Machine Type is required to use this setting.

When in Teller Mode the Viewer allows the user to select any date for EJ activity, with the calendar interface shown here.



The EJ data returned for viewing will always be only for EJ files having the station ID and machine type designated in Viewer Configuration utility.

## Workstations with Teller View

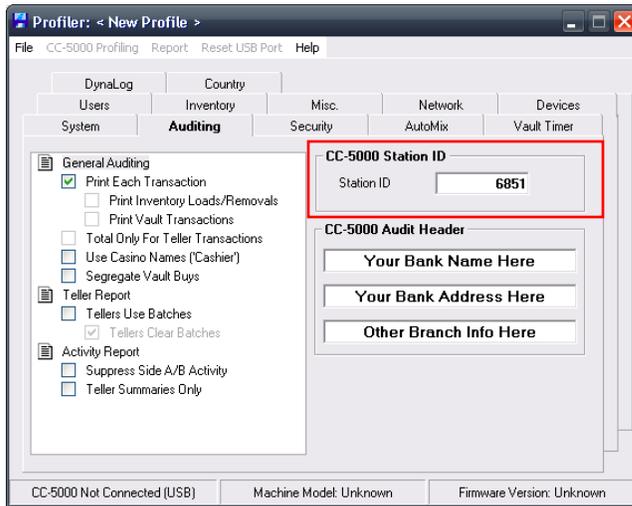


The Specify Viewer/station relationship mode is for Server scenarios that are using remote desktop. This allows DynaLog Viewer to be used in Teller View across multiple workstations rather than only being able to be used in Auditor View for all workstations.

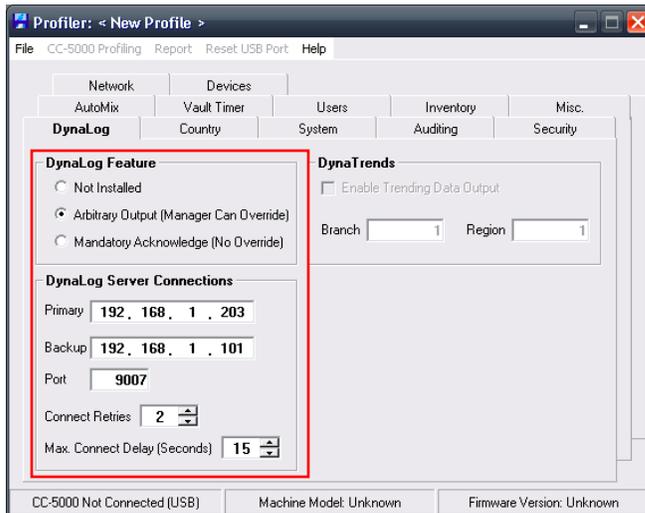
In Workstation Name, enter the computer name without the domain. Next enter the station ID of the CC-5000 this workstation will be able to view. The Machine Type section should correspond with the machine model of the CC-5000 Station ID. Up to 35 Workstations can be listed.

## CC-5000 Setup for DynaLog

Enabling DynaLog EJ output from the CC-5000 is accomplished with the CC-5000 Profiler tool, which is part of the DynaSetup utility that gets installed with DynaCash. Please refer to the Profiler documentation for instructions on how to use the Profiler. Once you have launched the Profiler, the **Auditing**, **Network** and **DynaLog** tabs will require some entries.



On the **Auditing** tab, make sure that the Station ID has a unique number (no other CC-5000 for this machine type has that number). It can be from 1 – 8 digits. The EJ files will contain that station number as part of their file name.



Go to the **DynaLog** Tab to enable EJ output. You'll need to select either the **Arbitrary Output** or **Mandatory Acknowledge** options. Which one you choose will depend on the level of security needed.

**Arbitrary Output** allows a manager override prompt to disable CC-5000 DynaLog EJ output if the connection between the CC-5000 and DynaLog server fails. This lets the user continue to use the CC-5000 if a server (or the network) goes down, but the printed data is no longer being archived at the server. However, teller transactions are still being logged to the CC-5000 internal History Report. Arbitrary mode would be a good choice if the CC-5000 also had a journal printer attached, for a backup audit tape.

**Mandatory Acknowledge** forces a DynaLog Server connection to be present in order for the user to do anything at all with the CC-5000. This mode wants an active EJ "listener" at all times. It doesn't offer a manager override – the only way to continue use of the CC-5000 is to fix the

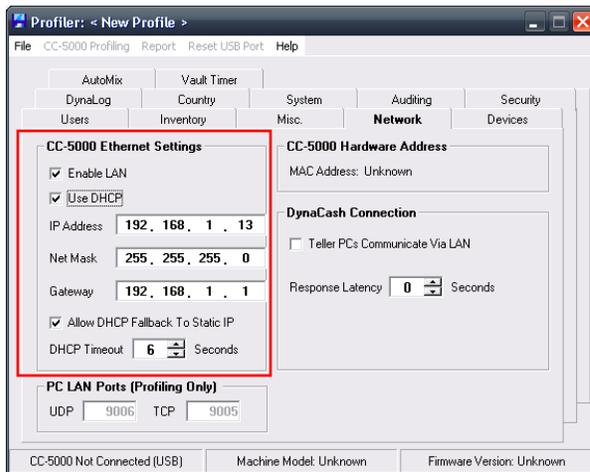
connection to either the primary or backup servers. This mode is recommended for all installations where the CC-5000 will be “paperless” (no journal printer) or where a printer is present but not being relied on by the auditors.

Next enter the **EJ Server 1** IP address in the box for that, in the format shown here. If you will be using a backup server (Server 2), enter that IP address in the **EJ Server #2** entry box. A backup server isn’t necessary but if one is configured, the EJ file will attempt to route to that server in the event that the primary server goes down. **NOTE – if using a backup server, you should configure all Viewers that may need to “see” this station’s EJ for Auditor Mode. That way those Viewers will have access to the backup server.**

Enter the EJ server port number or leave it at the default of 9007. Change this only if you had to change it in the DynaLog.ini Server configuration file. This port will be used for both the primary and backup servers.

**Connect Retries** determines how many times the CC-5000 will attempt to connect to both the Primary and Backup servers before failing.

**Max Connect Delay** is the amount of time in seconds that the CC-5000 will wait to connect to the DynaLog Server.



On the Profiler **Network** tab, check the **Enable LAN** box. You can check the **Use DHCP** box to let the CC-5000 acquire an IP address automatically, unless you are also using DynaCash over LAN (**Teller PC’s Communicate Via LAN** is checked) in which case you’ll need to disable DHCP and use valid static addresses in the **CC-5000 Ethernet Settings** entries.

When profiling to enable the EJ settings, use the **Remote Default** option on the Profiler **System** tab so that the CC-5000 EJ memory gets properly initialized.



- **Very Important** - The Server actually uses 2 network ports. There is an “EJ data” port (default is 9007) and a “connection maintenance” port (always one port number higher than the EJ data port). For any installation, it needs to be verified that ports 9007 and 9008 are both available for the DynaLog Server to use. If either port is not available, pick two other consecutive ports. See this link:

[http://en.wikipedia.org/wiki/List\\_of\\_TCP\\_and\\_UDP\\_port\\_numbers#Registered\\_ports:\\_1024.E2.80.9349151](http://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers#Registered_ports:_1024.E2.80.9349151)

for a list of ports. Any that are marked “unofficial” are good candidates to use (many are for computer games). You may also use a pair of ports in the 49152–65534 range (unregistered “dynamic” ports). These ports are generally used by Windows client programs that automatically “grab” the next available port for outgoing connections to a server (dynamic port assignment, where the client app allows Windows to give it a port). However, if the DynaLog service grabs two of these ports at boot up, client apps that use dynamic ports will get other ports assigned to them by Windows, since DynaLog already “owns” the two ports. This will be the case as long as the client app loads after the services load.

In any case, the Event Log entry shown on Page 4 of this document will be made if there is a port conflict.

For servers using a **firewall**, the firewall will need to be told to allow communications on the 2 ports used by the DynaLog Server. The firewall on any Viewer PC will also likely need to be modified for Viewer access to the Server. Please refer to your firewall documentation for more on this.

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DynaLog Electronic Journal  
Viewer Operations Guide  
Using Glory® Cash Dispensers and Recyclers  
With DynaCash™



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## *Introduction*

The DynaLog Electronic Journal Viewer provides a convenient method for viewing the archived DynaCash™ system activity files stored on a server. Each file is created by the DynaLog Server in response to printed output sent by the CC-5000 DynaCash terminal over the network. The archive files cannot be modified or deleted by personnel using the Viewer, though they can be printed or exported to other file formats by the Viewer.

Each file has its own date and station ID number assigned to it. The station ID matches the station ID assigned to the CC-5000 that “printed” the file to the server. The file date is maintained at the server, not the CC-5000 – a new file with the next day’s date will be automatically created by the server when a connected CC-5000 begins printing again the next morning.

The Viewer allows the user to see all printed activity for one date at a time, in either a 40 column black and red audit tape format or in a 48 column all black format, depending on the type of hardcopy printer in use with the CC-5000. For CC-5000s configured for no printer (paperless) the Viewer will use the 40 column black and red format. If viewing the current date for a CC-5000 in active use, the Viewer will update the journal contents as the CC-5000 prints data to the server.

The Viewer has two usage modes – Teller Mode and Auditor Mode. Which mode is enabled will depend on how the Viewer was set up by the System Administrator. Teller Mode uses a calendar interface that allows the various dates to be selected by mouse click or Arrow keys. Teller Mode is “locked” to view files for only one CC-5000 station, though historical data for that station can be viewed as well as the current date. Auditor Mode uses a tree list to show the various CC-5000 station ID’s (assuming there are multiple CC-5000’s reporting to the server). Each station ID in the tree list will have a list of available dates under the ID. A mouse click or Arrow keys are also used in the tree to select the station and date to be viewed. If the financial institution has more than one server storing the archive files, Auditor mode also allows the user to select which server to retrieve the files from, using a server “nickname” scenario.

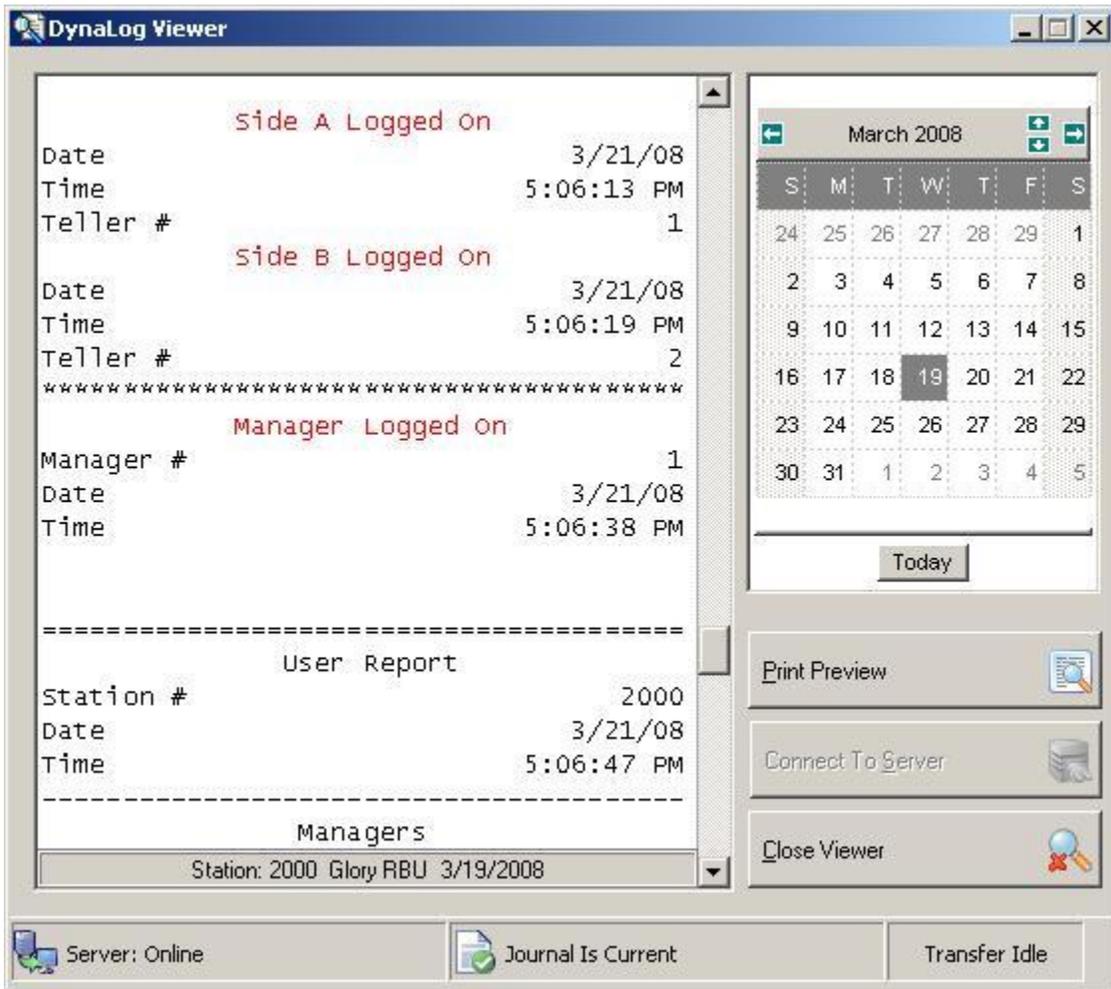
### **Teller Mode**



Start the Viewer by double-clicking the Viewer shortcut from the Desktop, or by choosing the Viewer program from the Windows Start menu. Your System Administrator may have the Viewer set to start when Windows starts, in which case you won't need to start it.

The Viewer window will show, with today's date selected on the calendar. The Viewer will automatically connect to the server and will request the journal file for today, for the station assigned by the System Administrator. In the example shown below, the station ID is 2000 and the request date is March 19, 2008. If a file for the date selected in the calendar exists on the server, the journal area will show the data. The journal footer shows the station ID, machine type, and date. If no file exists, the footer will show the station ID, machine type, date, and "(No File)".

During each file update, the "Transfer Idle" status panel will become a moving progress bar which indicates that a transfer is occurring. During this time the window is disabled and the calendar background becomes dark gray. The Print Preview button also gets disabled. You must wait for the update to complete before selecting a different date or previewing.

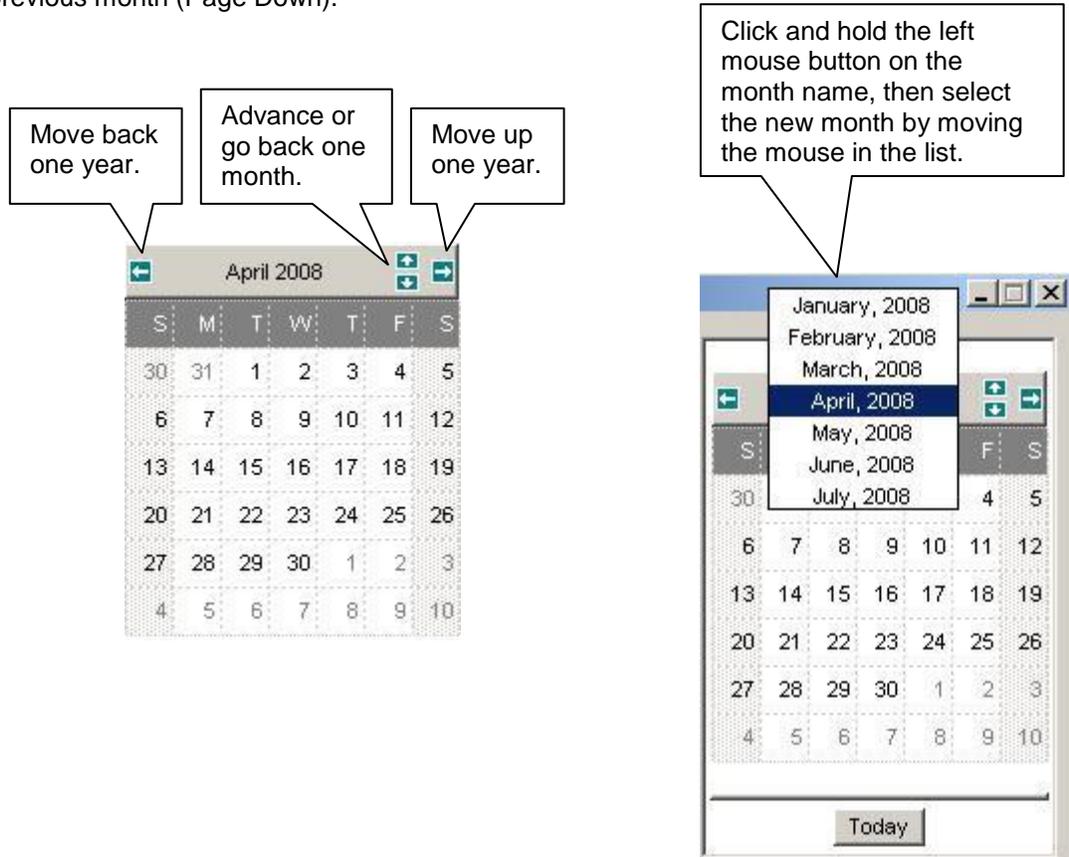


You can choose another journal date to view by left-clicking the mouse on the new date. If the Viewer can find a file for that date on the server the journal will refresh for the new date. The calendar has a **Today** speed button to get back to the current date after browsing previous dates.

You can also move through the calendar on a day-by-day basis by using the **LEFT**, **RIGHT**, **UP**, and **DOWN** arrow keys. To use the arrow keys, first click on the calendar (or TAB to it) to make it the active object. Then use the arrow keys to find the required date. The journal will refresh for the new date only when the arrow key has been released for 1 second.

Changing years is easily done by clicking the small left and right arrows at the top of the calendar. The left arrow moves back 1 year and the right arrow moves forward 1 year. There are several ways to change the month:

1. Left click the small up and down arrows at the top of the calendar. An up arrow click moves to the next month. A down arrow click moves to the previous month. Or,
2. Left click on the named month area. In the example below you would click on the words "April 2008". A pop-up list of the 3 months before and the 3 months after the current month will be shown. Keeping the left mouse button down during the click will let you move the selection in the list to a new month. Or,
3. Use the Page Up and Page Down keys to move to the next month (Page Up) or to move back to the previous month (Page Down).

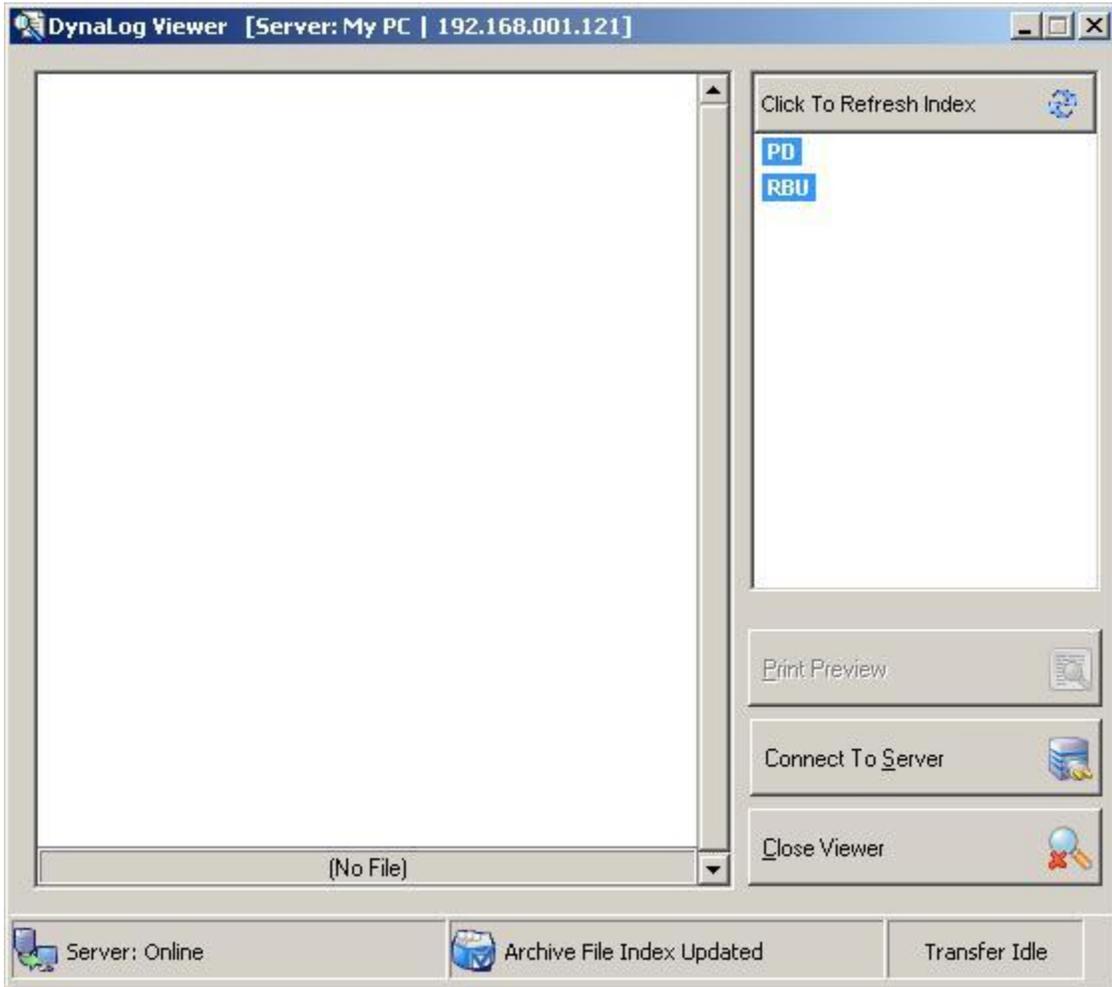


### Auditor Mode



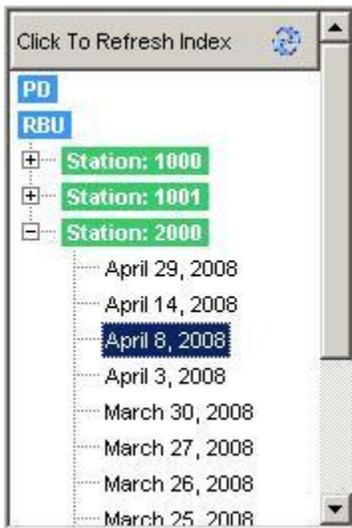
Start the Viewer by double-clicking the Viewer shortcut from the Desktop, or by choosing the Viewer program from the Windows Start menu. Your System Administrator may have the Viewer set to start when Windows starts, in which case you won't need to start it.

The Viewer window will show, with a tree view list box at the upper right side. The Viewer will automatically connect to the primary server and will show the journal file index for all stations with files on that server. The top level items in the index are machine models - in the example shown below, the user would click on the blue "PD" or "RBU" in the tree to expand the tree to show all stations for that machine type.



This example shows that the active server has journal files for RBU stations numbered 1000, 1001, and 2000. Clicking on any station item in the tree will expand that item to show the file dates available for the station.

The blue RBU item was clicked to expand open the list of stations. If the blue PD item is clicked, that item will expand to show all of the available PD stations.



Here, the RBU Station 2000 item was clicked, expanding the tree view to include all available file dates for that station. Once the date items are visible, you can click on a date to refresh the journal to that date's printed activity.

Another way to choose dates in the tree is by use of the Up and Down arrow keys. Moving to the next Station ID item with an arrow key will expand that station's file date list. Continue moving with the arrow key into the date list. Once you land on a date and release the arrow key for at least 1 second, the journal will be refreshed for that new date.

A **Refresh Index** button at the top of the tree allows you to update the file index from the server at any time. This would generally be used to see if any new files have been created by the server since the Viewer connected to the server (or since the last index refresh). "New" files on the server come from CC-5000 terminals being put in use for the first time that day, or from CC-5000 terminals being used constantly and the server has just changed to a new date at midnight.

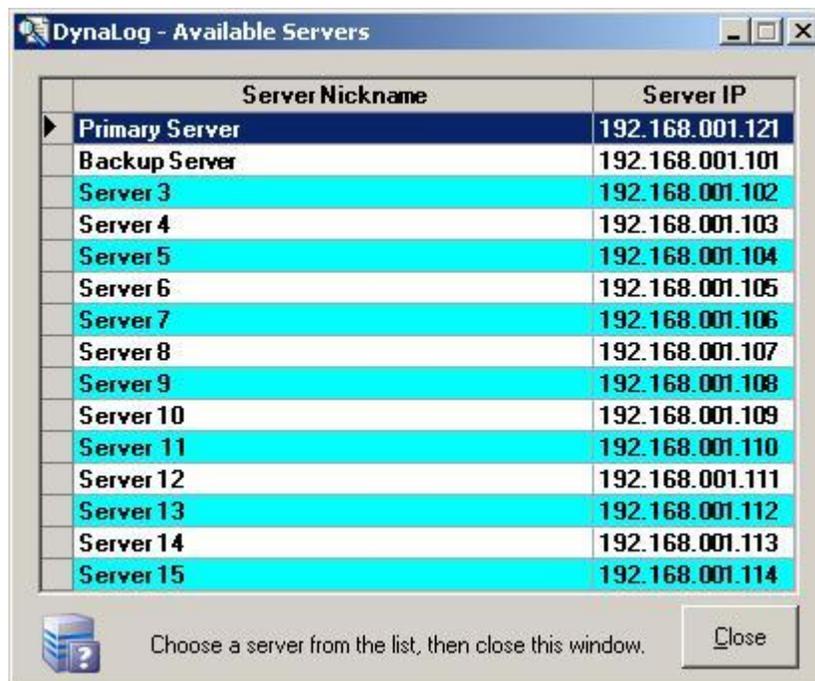
When first launched, the Viewer connects to the "primary" server and gets the file index for that server. However, Auditor Mode allows the user to reconnect to any one of up to 25 servers, each of which is logging archive files for any number of CC-5000 terminals. The list of available servers is created by your System Administrator when the Viewer app is installed.

Auditor Mode always has the **Connect To Server** button enabled (except during journal refreshing). Click this button to choose another server from the servers list.



The Available Servers window then lets you choose a new server by clicking on the server nickname or using the Up or Down arrow keys to move to the new server in the list.

Once you've chosen the next server, click the Close button. The Viewer will close its connection with the current server and will attempt to connect to the new server. Once it connects, the File Index tree will be refreshed to show the files on the new server.



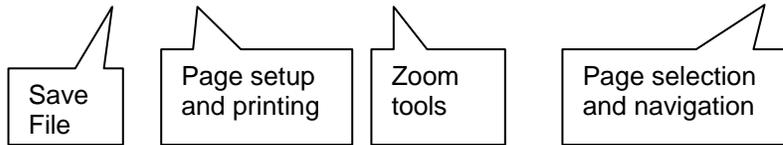
## Printing, Previewing, and Exporting – Both User Modes

Any time printed journal data is visible in the journal area, you can click the **Print Preview** button to further process the data.

The Preview window lets you print the current journal to any standard printer, or to export the journal as a file in a number of different formats.



Some of the common tools available on the Preview window toolbar are:



The Save File feature may be particularly helpful since it lets you export the current journal file into formats such as PDF, RTF, DOCX, Excel, and most popular picture formats.

## DynaLog Server Event Log Messages (Revision 2, 11/30/2010)

The DynaLog Server runs in the Local System user account and does not require a user logged on to use it. DynaLog writes any error messages directly to the Application Event Log using the Source name "DynaLog". There are five event categories, listed below. These names show in the Application Event Log in the Category column. They are basic indicators of the severity of the event. Fatal Error and Action Required type events likely will need intervention from the IT department. Information events don't require any action. Data Reliability errors may or may not correct themselves, and therefore may require intervention.

Event types will show in the Application Event Log "Type" column and can be either Error, Warning, or Information.

Event ID's as seen in the Application Event Log "Event" column begin at ID # 6 (see Messages section). Most of the events indicate that an error of some kind occurred, and they will include detailed information about the error. Following each Event Message listed below are the Event Type followed by the Event category, enclosed in parentheses.

### **Event Categories:**

- 1 – Fatal Error
- 2 – Action Required
- 3 – Data Reliability
- 4 – Action Recommended
- 5 – Information

### **Event Messages:**

6 - Error in TCP Receive event. A DynaLog Viewer file request encountered an error while searching the log file path or while attempting to send the file size and file contents. The error details are: <error detail message> (Error, Data Reliability)

7 - Warning in TCP Receive event. A new CC-5000 connection could not determine the CC-5000 print width due to a "Val" exception. Print width is being defaulted to 40. Station Information: <station ID> (Warning, Data Reliability)

8 - Error in TCP Receive event CC-5000 log file search/create. The error is: <error detail message> (Error, Data Reliability)

9 - Error in InitServer() - invalid server port entry in DynaLog.ini. (Error, Fatal Error)

10 - Error in TCP Receive event. A DynaLog Viewer file list request encountered an error while retrieving the list of log files or while attempting to send the file list to a Viewer. The error details are: <error detail message> (Error, Data Reliability)

11 - Warning in InitServer() - invalid Outgoing Ping Interval entry in DynaLog.ini. The interval has been forced to: <interval value> (Warning, Action Recommended)

12 - The DynaLog Server has begun listening for clients on port: <port number> (Information, Information)

13 - The DynaLog Server Listen method encountered an error in InitServer(). The error is: <error detail message> (Error, Fatal Error)

14 - The DynaLog Server was unable to instantiate the Server control, in InitServer(). This may require a reinstallation of DynaLog. The error details are: <error detail message> (Error, Fatal Error)

15 - The DynaLog Server encountered a problem while setting File I/O permissions to access the CC-5000 Log Files folder. The Log Files folder may have been deleted or renamed. No logging or viewing can be done until this is corrected. The error details are: <error detail message> (Error, Fatal Error)

16 - The DynaLog Server archiving service has been stopped. (Information, Information)

17 - Error in TCP Receive event. A DynaLog Viewer file request was unable to clear the previous stream to create a new one. The error details are: <error detail message> (Error, Data Reliability)

18 - Error in TCP Receive event. An error has occurred during the test for an existing stream reference for a CC-5000 station. Station Information: <station ID>. Error detail: <error detail message>. (Error, Data Reliability)

19 - Error in TCP Receive event. An error has occurred during the string splitting and formatting process for incoming journal data from a CC-5000 station. Station Information: <station ID>. Error detail: <error detail message> (Error, Data Reliability)

20 - Error in TCP Receive event. An error has occurred during a CC-5000 data stream write to the log file for that station. This can occur if the log file was deleted or moved while the DynaLog service was running. Station Information: <station ID>. Error detail: <error detail message> (Error, Data Reliability)

21 - The DynaLog Server ErrorEvent has logged a Dart Communications network-related error. The error number is <error number>. The error description is: <error detail message> (Error, either a Fatal Error or Data Reliability depending on the error type)

22 - A new CC-5000 or DynaLog Viewer client has just connected to the DynaLog Server. The client's IP address is: <IP address>. (Information, Information)

23 - An existing CC-5000 or DynaLog Viewer client has just been disconnected from the DynaLog Server. For CC-5000's, this may be due to a LAN cable disconnection or the CC-5000 may have been powered off. For Viewers, the disconnection generally means that the Viewer application was closed by the user. The disconnected client's IP address is: <IP address>. (Information, Information) **DEPRECATED IN SERVER V1.0.0.9 – SEE NEW EVENTS # 35 AND 36.**

24 - The DynaLog Server ErrorEvent has logged a Dart Communications network-related error. This error is likely due to a DynaLog Viewer closing or a CC-5000 being powered off, in which case it is considered a normal event. However, it could indicate something more serious. The error number is <error number>. The error description is: <error detail message> >. (Information, Information)

25 - Error in TCP Receive event. An error has occurred during a CC-5000 data stream output to a connected DynaLog Viewer. Station Information: <station ID>. Error detail: <error detail message> (Error, Data Reliability)

26 - Error in TCP Send event. An error has occurred during the Archive File List output to a connected DynaLog Viewer. Error detail: <error detail message> (Error, Data Reliability)

27 - Error in TCP Send event. An error has occurred during an initial log file output (past the 8K buffer boundary) to a connected DynaLog Viewer. Error detail: <error detail message> (Error, Data Reliability)

28 - An error has occurred in the DynaLog Server service timer event. The error details are: <error detail message> (Error, Action Recommended)

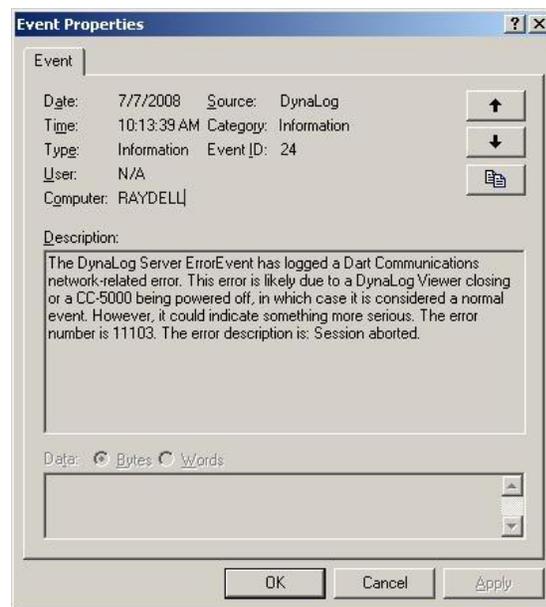
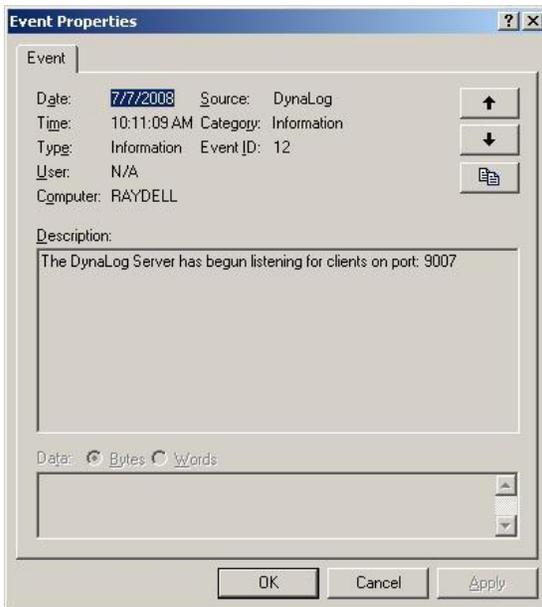
29 - An error has occurred in the DynaLog Server client creation event. The client TCP connection may not have instantiated correctly. The error details are: <error detail message> (Error, Fatal Error)

30 - An error has occurred in the DynaLog Server client destroy event. The client TCP class had an error while setting its objects to Nothing. The error details are: <error detail message> (Error, Fatal Error)

31 - Error in InitServer() - an exception occurred while the DynaLog service initialization attempted to delete leftover Index Files (FileList.\*). This should not affect operation of DynaLog, but it indicates a possible file system problem. The error details are: <error detail message> (Warning, Action Recommended)

Following is a sample view of the Application Event Log showing DynaLog events 12 and 24, both of the "Information" Type and Category:

Type	Date	Time	Source	Category	Event	User	Computer
Information	7/7/2008	10:13:...	DynaLog	Information	24	N/A	RAYDELL
Information	7/7/2008	10:11:...	DynaLog	Information	12	N/A	RAYDELL



**New events added in V1.0.0.6 (5/11/2010):**

32 - CC-5000 Configuration Error detected in TCP Receive event. A CC-5000 using a duplicate Station ID in use by another CC-5000 is attempting to send EJ data. Using the same Station ID for multiple CC-5000 units is not permitted. First unit IP Address: <IP address> Second unit IP Address: <IP address> (Error, Action Recommended)

33 - A midnight rollover has just flagged an active CC-5000 connection to create a new daily EJ file, the next time the CC-5000 sends an EJ packet. The current CC-5000 reference info is: <reference info> (Information, Information).

34 - The Receive event has just created a new daily file for a CC-5000. The current CC-5000 reference info is: <reference info> (Information, Information).

**New events added in V1.0.0.9 (11/30/2010):**

35 - A CC-5000 client has just been disconnected from the DynaLog Server. This may be due to a LAN cable disconnection or the CC-5000 may have been powered off. The disconnected CC-5000 IP address is: <IP address>. (Information, Information). **SUPERSEDES EVENT # 23.**

36 - A DynaLog Viewer client has just been disconnected from the DynaLog Server. The disconnection generally means that the Viewer application was closed by the user. The disconnected Viewer's IP address is: <IP address>. (Information, Information). **SUPERSEDES EVENT # 23.**

37 - A CC-5000 client has just been forcibly disconnected by the DynaLog Server. This is due to an expected ping response not arriving on time. The LAN cable may have gotten disconnected or the CC-5000 may have been powered off. The disconnected CC-5000 IP address is: <IP address>. (Warning, Data Reliability).

38 - A Viewer client has just been forcibly disconnected by the DynaLog Server. This is due to an expected ping response not arriving on time. This is generally due to an abrupt power outage of the Viewer PC, but could be due to network delays or a dropped packet. The disconnected Viewer IP address is: <IP address>. (Warning, Data Reliability).

# Troubleshooting EJ

- Make sure LAN and EJ are enabled on the CC-5000. Often overlooked.
- Check the cabling. Often overlooked. Watch out using regular LAN cables when you need a crossover cable or just an unplugged cable.
- Make sure that DotNet 2.0 has been installed on the PC that is running EJ server and EJ Viewer.
- Make sure the Dynalog server is installed and Started as a service. When first installed EJ server requires you to restart the PC. If this is installed on an actual server that can't be restarted at that time it will be possible to manually start the service in lieu of restarting the machine.
- Check for firewalls blocking the connections. Check for blocked ports 9001,9002,9005,9006, 9007, and 9008. 9001 tcp and 9002 tcp are the ports used for communicating to the CC-5000. 9005 tcp and 9006 udp are used for profiling. 9007 tcp and 9008 tcp are used for EJ. Windows firewall likes to block communications without notifying the user, it is recommended that this be turned off.
- If the CC-5000 is not connecting to the primary server, profile the EJ primary and backup servers as the same IP. This will allow two attempts at connecting to the EJ server. If the CC-5000 doesn't connect on the primary but connects on the backup it could notify you of network lag or heavy traffic on the network. This is also good if you have only one EJ server.
- On Windows 7, Windows Server 2008 R2, Windows Server 2008 or Windows Vista you can use the following command line procedure to install Telnet

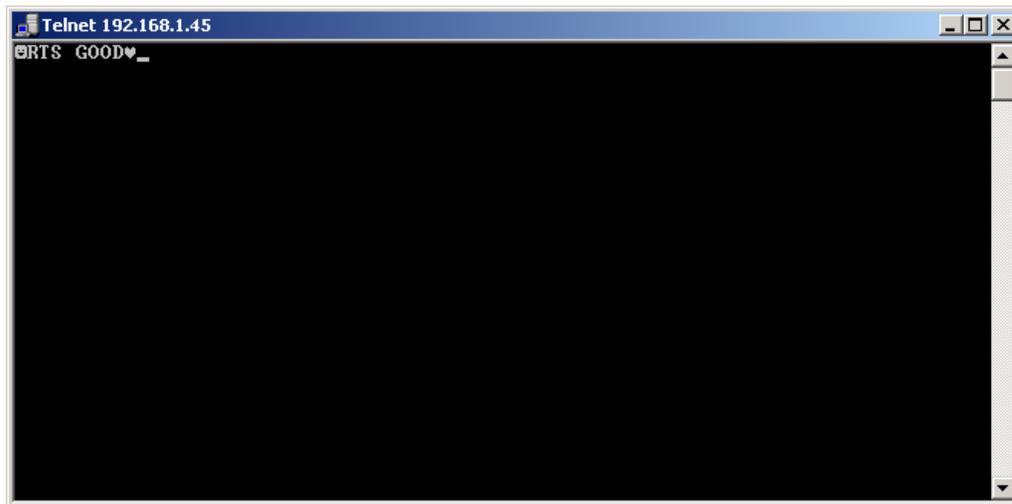
Administrative privilege is required to install.

1. Open a command prompt window. Click Start, type cmd in the Start Search box, and then press ENTER.
2. Type the following command:  

```
pkgmgr /iu:"TelnetClient"
```
3. If the User Account Control dialog box appears, confirm that the action it displays is what you want, and then click Continue.
4. When the command prompt appears again, the installation is complete.

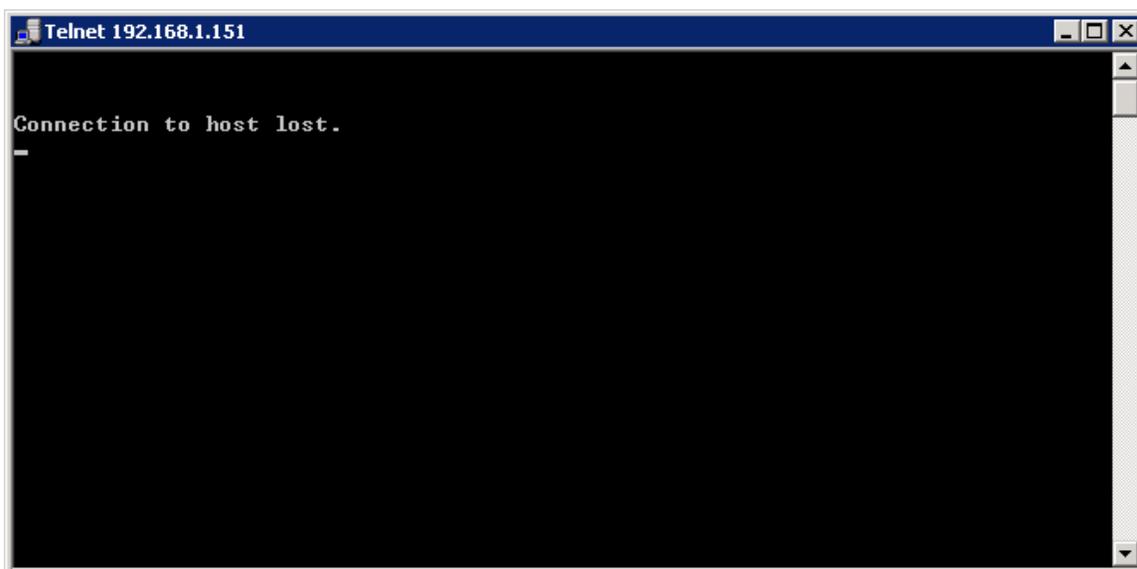
-Run telnet from the computer that EJ server is located on. This is to check that the EJ server can connect to the CC-5000. To do this, go to run (windows button +r) and enter: telnet (IP address of CC-5000) (9001 or 9002). Note: This can only be done if EJ server is not in an error state on the CC-5000. It is best to test this before turning EJ server on in the CC-500.  
Example: telnet 192.168.1.13 9001.

Here is what you should receive with a good connection

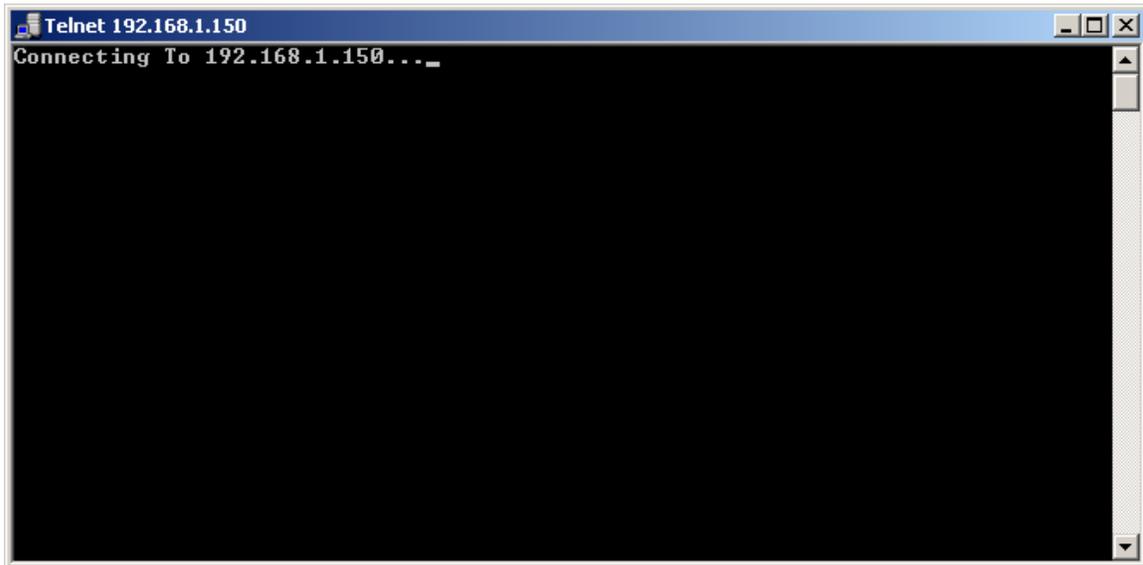


-Run telnet from a computer on the network to the server. This is to check that something on the network can communicate to the EJ server. To do this go to run (windows button +r) and enter: telnet (IP address of EJ Server) (9007).  
Example: telnet 192.168.1.1 9007

Here is what you should receive with a good connection

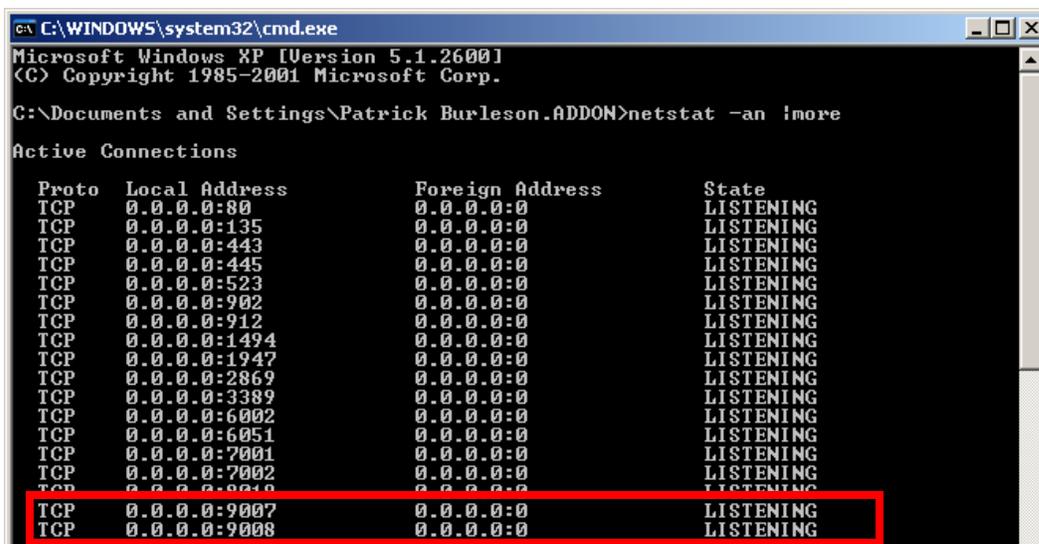


-If you get a Connecting to (IP address)... when using telnet, there is something blocking communications. Check any firewalls.



To view if the DynaLog Server is running and has the ports listening for communications from the CC-5000, at where the DynaLog Server is installed enter into a command prompt:

Netstat -an |more



This will show the Active Connections. Look for a TCP entry with an Local Address of 0.0.0.0 and the port 9007 and 9008.