

**Oracle® Retail XBR Loss Prevention and Store
Analytics**

Intermediate Training Guide
Release 7.0

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C H A P T E R

1

Building and Modifying Queries

OVERVIEW

Note: The rebranding for the latest version of this documentation set is in development as part of post MICROS acquisition activities. References to former MICROS product names may exist throughout this existing documentation set.

Analytics has a very user-friendly process for building Adhocs and modifying existing queries. Although Analytics users can build new queries, it is strongly recommended that they instead modify an existing query whenever possible. It's much less time consuming to modify an existing query than to create a brand new query.

Modifying Adhoc queries involves making a copy of an existing query by using the "Save As" command and then making changes to reflect the modification. All user levels have the access to build or modify their own queries; however, only System Administrators can copy and modify all queries.

LEARNING OBJECTIVES

Upon completion of this section, you should be able to:

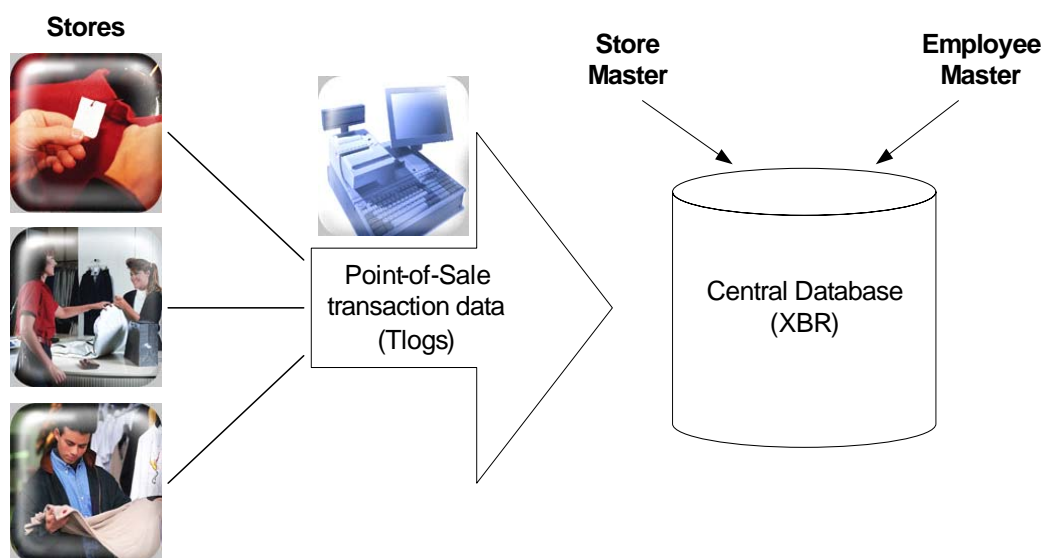
- Understanding the Flow of Data
- Understanding Data Levels and Applicable Tables
- Define all aspects of the query properties
- Identify Main and Supplemental files
- Indicate default time frames
- Add, Format and Delete fields
- Create and format mathematical calculations
- Add calculations to a subtotal row
- Create "specific criteria" to prefilter reports prior to running
- Create variable pre-filters (parameters) to use prior to retrieving data
- Create permanent filter criteria
- Identify appropriate policy notes to be used for queries

DATA FLOW PROCESS

XBR Store Analytics is a window to the Point-Of-Sale (POS) activity in your stores that allows you to look for trends and exceptions in the data. Your home office collects the Transaction data from the registers at each store. Your POS system polls each store's transactions and transfers them to your home office in the format of a Transaction log (Tlog) file. A Loader program then processes and formats the data and saves it to the XBR database.

A Project Consultant works with a representative from your company to determine the risk areas and specific information that should be captured from the t-log for reporting purposes in XBR. The more information your Tlog contains, the more robust your Loss Prevention reporting can be.

Register systems are polled daily at each of the stores within your organization.



Analytics' Loader program processes POS data from the Tlogs (or reporting views are set up within a data warehouse) and organizes the data into three accessible levels (Summary, Header and Detail) for reporting purposes.

Figure 1-1: Origin of XBR Data

The data, once saved to the XBR database, is then stored in tables at one of three data levels: Summary, Header, or Detail. Queries are then built using tables that store data at each of these levels.

Level	Description
Summary	<p>Provides Summary level statistics by store, cashier or register. There is only one line for each store (or cashier or register). This level does not provide transaction specific information.</p> <p>Example: Example: At store 220, there were 10 manually keyed credit card transactions totaling \$500 yesterday.</p> <p>The database table that stores data at the summary level is: POS_STATISTICS.</p>
Header	<p>The Header level contains one summary line for each transaction. This can include: Cashier ID and Name, Transaction Date, Time and Number, Total Transaction Amount, and Tender Type</p> <p>There are additional indicators at this level, called flags, identifying various types of special activity associated with a transaction like employee sale.</p> <p>Example: On February 28, 2005, Cashier #91375 rang a merchandise purchase on transaction #548. This transaction that tendered for \$100.00 at Register #3 at 11:30 am.</p> <p>The database tables that stores data at the Header level are:</p> <ul style="list-style-type: none">■ POS_Journal_Header■ POS_Sales_Header.
Detail	<p>The Detail level contains multiple rows of detailed data per transaction in addition to the data available at the Header level. This data includes Account numbers, SKU, tax and tender, and can include SKU level details such as, SKU ID, SKU description, SKU quantity, line discounts for a specific SKU, and extended amounts per specific SKUs.</p> <p>Example: On the above Header level example, the first SKU on this transaction was SKU #46802, a white t-shirt, originally priced for \$30.00 but with a line discount, was priced at \$25.00. The second SKU on this transaction was SKU #67329, a pair of jeans, priced at \$55.00. The third SKU on this transaction was a leather belt priced at \$20.00. This was a Credit Card transaction on a Discover Account "6011 XXX XXX 5555".</p> <p>This level would specify not only the amount tendered, but also would display split payments and cash back, if applicable.</p> <p>The database tables that stores data at the Header level are:</p> <ul style="list-style-type: none">■ POS_Journal_Detail■ POS_Sales_Detail■ POS_Journal_Tender■ POS_Sales_Discounts■ POS_Sales_SKU■ POS_Sales_Tender.

NEW QUERY WINDOW OR UPDATE QUERY WINDOW

The first step to creating a new query or modifying an existing query is to access the query maintenance window.

- To create a new query, click the **New** button while in the Query List window.
- To modify a query, select the query name and click the **Open** button.

There are six standard tabs that are used to either build or modify queries.

Tab	Description
Define	Identifies the properties of the query.
Files	Indicates which tables are being used to build the query.
Fields	Allows users to add, format and delete fields and calculations used in the query.
Totals	Allows users to specify subtotal data.
Criteria	Used to create prefilter, permanent filters and filter variables (parameters).
Policy Note	Allows users to specify policies or guidelines that their users should adhere to in various risk areas of their business.

DEFINE QUERY PROPERTIES

The Define tab identifies the properties of a query. General information such as report title, style, security access, and descriptive notes are entered and identified on this tab.

The screenshot shows the 'Add New Query' dialog box with the 'Define' tab selected. The dialog has a title bar with standard window controls. Below the title bar, there are tabs for 'Define', 'Files', 'Fields', 'Totals', 'Criteria', and 'Policy Note'. The 'Define' tab is active and contains the following sections:

- Report Title:** A text box containing '[DATE]'.
- Query Type:** Three radio buttons: 'Adhoc' (selected), 'Drill Down', and 'Control'. Below them is a checkbox labeled 'Use Grid style for movable and resizable columns' which is unchecked.
- Run options:** Two checkboxes: 'Immediately' (checked) and 'Offline' (unchecked).
- Security Access:** Three radio buttons: 'Public' (unchecked), 'Run-Only' (unchecked), and 'Private' (checked). To the right is an 'Owner:' dropdown menu showing 'Train 6'.
- Classification:** A dropdown menu showing 'NOT CLASSIFIED'.
- Notes:** A large text area for entering notes.
- Colors and Fonts:** A button at the bottom left.

Figure 1-2: Add New Query - Define Tab

Table 1-1: *Define Tab Properties*

Property	Description
Report Title	<p>Report Title is the title of the report that is displayed at the top of a report once data has been retrieved. It is not the Query Name, which is listed in the Queries window and is limited to 32 characters. This title can be temporarily changed after the query has run by accessing Design Mode or selecting Report Options as learned in the Fundamental training guide. Please refer to the Fundamental Training Guide for further assistance using Design Mode and Report Options.</p> <p>If the function name [DATE] is used in the title, then date range used to retrieve the data will be displayed as part of the report title. For example, if a Credit Card Detail query is run for Calendar Month June, then the title at the top of the report might read, "Credit Card Activity 6/1/20XX - 6/30/20XX. By default, [DATE] is placed in the title whenever a new Adhoc is created. In addition to the title, all query results will show the current date, time, and page numbers.</p>
Query Type	<p>Query Type allows users to select Adhoc for a new query being built or to convert an Adhoc to a Drill Down, Decile or Control.</p>
Grid Style	<p>Grid Style is used to move or resize columns. When Grid Style is selected, XBR inserts a border into the report, separating columns and rows; it creates a view similar to that of a spreadsheet. Users can use those borders to easily move and resize columns. Be aware that Report titles can become truncated into one column when using this style.</p>
Run Options	
■ Immediate	<p>Immediate will run the query right on your screen and you will have to wait for the results to display.</p>
■ Offline	<p>Offline will run the query at a pre-defined process that was set up during installation. The results will be placed on the My Report window.</p>

Table 1-1: *Define Tab Properties (continued)*

Property	Description
Security Access	The Security Access determines the level of access the Users have to a query.
■ Public Access	All Users can run the query as well as open the query to make permanent changes. For example, all Users can add, format and delete fields, create calculations, make copies of the queries, etc. in addition to running the query.
■ Run-Only	All Users can run the query but do not have access to modifying the query unless they are the System Administrator or the owner of the query.
■ Private	The query is only visible to the System Administrator and the Query Owner. They are the only users that can run and modify the query.
Classifications	Classifications are used to organize queries. They are similar to folders in a Windows environment. Users need to select an appropriate classification for their queries.
Notes	The Notes field allows users to add descriptive notes and other helpful information about the query data. These notes can be viewed in the Query List window when the query name is selected.
Colors and Fonts	The Colors and Fonts button allows users to set up text attributes and color options that will be the default for this query. Any changes made here will be applied to all fields that already exist in the query, including those that you have made specific color/font changes to.
Test Query	The Test Query button only appears when Adhoc queries are being converted to Drill Downs, Deciles or Controls. The button allows users to test the query after the query type is changed.

How to Define A New Query

1. Click in the **Report Title** text box. Press the "Home" key or click at the beginning of the date function to keep the [DATE] function as part of the report title (optional). Type in a report title that will be displayed at the top of a report.
2. If the query is new, then click the **Adhoc** radio button.
 - a. If the query is not new, then click the applicable query type radio button (either **Drill Down**, **Decile** or **Control**).
 - b. Click the **Test Query** button to ensure that the query runs without any errors.
3. Select either **Immediate** or **Offline**.

4. Select one of the following three options for the **Security Access**:
 - Public* All users can run and modify the query.
 - Run-only* Analysts can run the query; System Administrators and Query Owners can run and modify the query.
 - Private* Only System Administrators and Query Owners can run and modify the query.
5. Click the **Owner** down arrow and select the owner of this query.
6. Click the **Classification** down arrow and select the appropriate classification to store the query in.
7. Click the **Notes** text box and type information that will tell XBR Users the purpose of running the query.
8. Click the **Colors and Fonts** button to determine display color and font attributes if different from the application defaults.
9. The **Test Query** button is only applicable when converting an Adhoc query into a Drill Down or a Control. The button allows users to test the query after the query type is changed

IDENTIFY MAIN AND SUPPLEMENTAL FILES

Files

A query is built by selecting one main file and up to five supplemental files on the **Files** tab. It is recommended to use a point-of-sale (POS) file as the main file whenever possible. There are restrictions on using certain tables together in one query. For example, users cannot use detail tables and summary tables in the same query. Analytics can accommodate the need for detail and summary level information by providing links between the two types of queries. POS data is stored in table names beginning with "POS", like POS_STATISTICS. Non-POS data is stored in supplemental tables, like Master files. Common supplemental files include the Store Master, Employee Master, and SKU Master.

Supplemental files are used to support data retrieved from the Main file. For example, some users capture cashier names in the Employee Master but not in the POS Statistics table. The Employee Master can be used as a supplemental file in order to add the Employee Name to the query results.

Supplemental Files

Supplemental Files are considered non-POS data that is also stored on the XBR database. Any data stored on the XBR database can be used in report builds and helps to make the reports more robust for the end-user. Supplemental files supply supportive data to the database that can also be used in XBR reports. This data is in addition to the POS data downloading from the stores daily. This information is an important component of data organization because it helps identify trends more readily by providing extra data not typical of the POS system, such as Employee Name, Store Manager Name, etc. For example: *an XBR user may not notice employee # 93687 is an issue until the name "Jane Smith" is visible in the query results numerous times.*

The common master files include the Store Master, Employee Master and Register Master. However, modifications exist to enable other master files to be added to the database as well, such as Region Master and District Master.

Supplemental File	Description
Store Master	Provides store name, city, state, store manager name, and store phone number.
Employee Master	Provides employee name, employee number, social security number, and job code.
Register Master	Provides register number, type, location and group, and store number, etc.
SKU Master	Provides information about each SKU (i.e. SKU number, Description, UPC and size).
Video Master	Provides information for video linking (i.e. - video vendor, IP address, and camera)

Date Selection

A default **Date Field** and **Date Name** are also identified on this tab. The Date Selection area allows users to limit the range of dates returned by the query.

Date Field: The date field options are built from the main file and are used to qualify the data retrieved from the query (frequently there is only one date field, such as TRANSACTION DATE or NONE). If **Transaction Date** is selected, then XBR will recognize a date range in the Run window. If **None** is selected, then the query will retrieve data without using a specific date range.

Date Name: The date name is the default time frame that will reflect data when a query is run, for example, Last Week or Yesterday.

How to Select Files and Identify Date Fields

1. In the Add New Query window, select the **Files** tab.

Figure 1-3: Add New Query - Files Tab

2. Click the **Main File** down arrow and select the file (table) that will be used to build this query.
3. **[OPTIONAL]** Click the **Supplemental File** down arrow and select a file. Only a maximum of five (5) supplemental files can be used to support the Main file in each query.



Detail, Header, and Summary Level tables can not be used in the same query.

4. Click the **Date Field** down arrow and select a date field such as Transaction Date or None.
5. Click the **Date Name** down arrow and select a default date name. This date name will appear as a default in the Run window.

ADDING, FORMATTING, AND DELETING FIELDS

Fields can be added to queries from both main and supplemental files. When fields are selected from files, the formatting properties are already assigned based on how the field was identified when the table was created. These attributes were assigned to this field in the background when the Table and Field were added to the database. For example, an Employee ID number might be center aligned within a column and displayed as a general number without commas, percentages or currency symbols. Although field attributes are already assigned, they can be modified for each individual query when adding the field to that query.

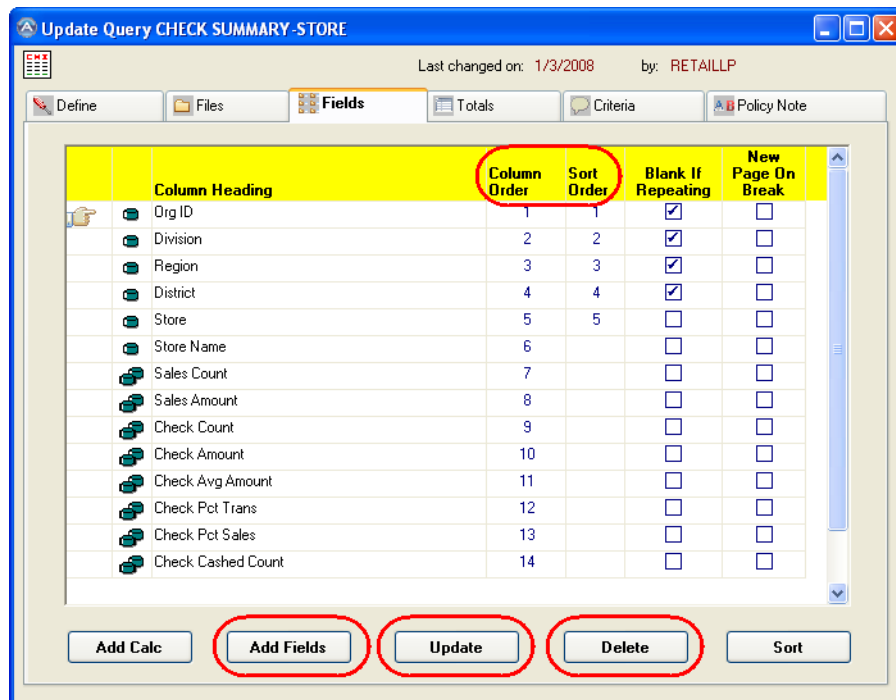


Figure 1-4: Update Query - Fields Tab

Once fields have been added to a query, users can then determine column order and sort order. Column order defines the order of which column displays first in a report. The sort order determines whether certain data will be displayed in ascending or descending order before other columns in the report. For example, if a query is sorted by Store Number first and then Cashier Number, when the report runs, store numbers will be displayed in sequential order and within each store number, cashier numbers will be displayed in sequential order.

How to Add a Field

1. In the **Update Query** or **Add New Query** window, click the **Fields** tab (Figure 1-4).



It is recommended to use as many fields as possible from the POS file rather than the supplemental files.

2. Click the **Add Fields** button.

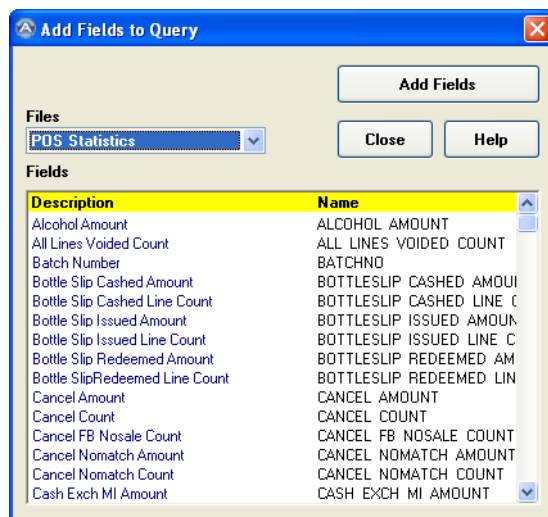


Figure 1-5: Add Fields

3. Click the **Files** down arrow and select the table that the fields are located in.
4. Scroll through the list of fields and select the field to be added to the query. Use the **[Ctrl]** or **[Shift]** keys to select multiple required fields prior to clicking the **Add Field** button.
5. Click the **Add Fields** button.
6. Click the **Close** button once all necessary fields have been added.

How to Delete a Field

1. In the **Update Query** or **Add New Query** window, click the **Fields** tab.
2. Click the **Column Order** number that represents the field. When a **Column Order** number is selected, the hand icon points to the selected field.
3. Click the **Delete** button.

FORMATTING A FIELD

Fields have predefined attributes already assigned to them. However, field formats can be modified in the Maintain Adhoc Query Fields window. Select the field to modify on the **Fields** tab, and then click the **Update** button to access this window.

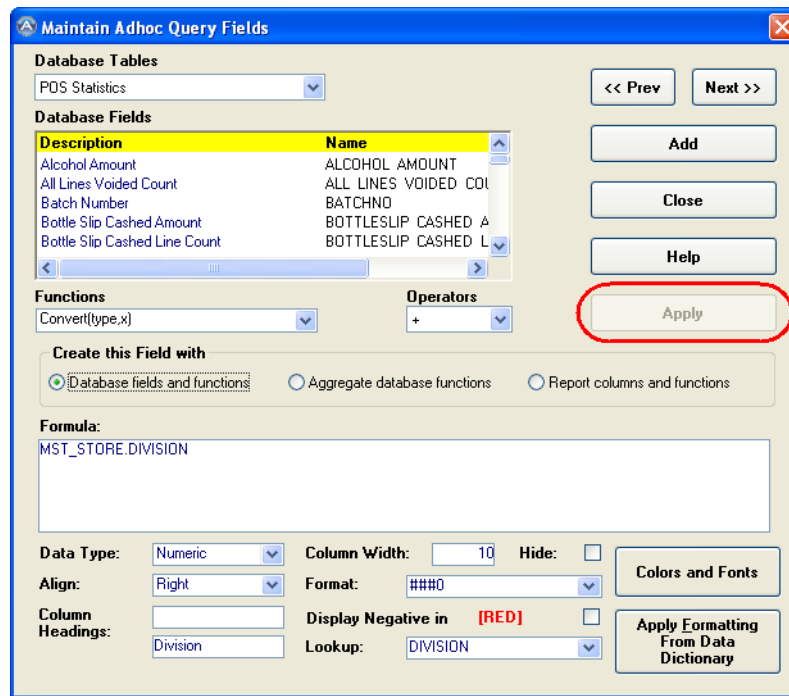


Figure 1-6: Maintain Adhoc Query Field

The following table lists and describes the parameters of the Maintain Adhoc Query Field window (Figure 1-6):

Table 1-2: Maintain Adhoc Query Field Parameters

Parameter	Description
Database Tables	The Database Tables drop-down list allows users to select the appropriate table that contains desired fields. For example, Employee Name is located in the Employee Master table. Therefore, in order to modify the attributes of this field, the Employee Master table would need to be selected to allow access to the field.
Database Fields	The Database Fields that are listed are reflective of the selected Database Table . In the figure above, the POS-Statistics table is selected; therefore the fields listed are from the POS-Statistics table.

Table 1-2: *Maintain Adhoc Query Field Parameters (continued)*

Parameter	Description
Functions	The Functions section allows users to select mathematical functions that will be applied to a field in the Formula section. For example, click the Function down arrow and select SUM to add the SUM function to total the field.
Operators	The Operators area provides a drop down list of mathematical operators that are used in expressions (For example: + - * and /).
Create this Field with	<p>The Create this Field with section updates one of the three radio buttons automatically depending on the function, if any, that is being applied to the field.</p> <ul style="list-style-type: none"> ■ Database fields and functions is automatically selected when a field is represented as a non-aggregate field. ■ Aggregate database functions is automatically selected when there is a function or mathematical expression represented in the field, making it an aggregate field. ■ Report columns and functions is automatically selected when a report function is applied to a field, such as Transaction Day, which returns the weekday name in the Query results.
Formula	The Formula text box is where the selected Table and Field name appear. Function expressions can also be created and will display in this box.
Data Type	<p>The Data Type area defines the type of field that is being formatted. This criteria is established in the initial database and shouldn't be modified. Modifications can cause errors to occur when running queries. The four data types are Numeric, Character, Date and Time.</p> <ul style="list-style-type: none"> ■ Numeric data types typically identify values. ■ Character data types identify text and digits that are not used as values like phone numbers and social security numbers. ■ Date data types refer to calendar date fields like transaction date. ■ Time data types refer to time of day fields like transaction time.
Align	Align is used to indicate the field alignment within the column width. Alignment selections include Left, Center, or Right.

Table 1-2: *Maintain Adhoc Query Field Parameters (continued)*

Parameter	Description
Column Headings	Column Headings allows users to create the text that will identify each of the columns in the report. There are two text boxes available to give a wrap effect to column headings. If long column headings are not broken into two rows, then the column width needs to be wide enough to display the heading.
Column Width	Column Width allows users to indicate an adequate column width so that all of the data can be displayed.
Format	The Format drop down list provides formatting options like currency, percent, whole values, and values with decimal places.
Display Negatives in Red	The Display Negatives in Red check box will display negative values in the red text color if checked. This can be helpful when a report includes both sale and refund activity
Lookup	The Lookup drop down provides a list of Lookup tables that can be applied to a field. For example, Transaction Types will display values in the report instead of text until the Lookup table, Trans Types, is applied to it. Once this table is applied, then the actual text that represents the value will display instead. For example, the text "Cancel" represents the value "002".
Hide	The Hide check box is selected to hide a column in the report. For example, if the District field is added as a field to the query but is hidden, then it allows users to prefilter on that field even though the data for that field will not display in the report.
Colors and Fonts	The Colors and Fonts button is used to change the default report colors to custom color and font type choices.
Apply Formatting From Data Dictionary	The Apply Formatting from Data Dictionary is used to apply the default formatting of a selected field to the active field displayed in the Formula text box.
Previous	The Previous button allows users to return to previous fields available in the query without closing the Maintain Adhoc Query Fields window.
Next	The Next button allows users to proceed to the next field in the query without closing the Maintain Adhoc Query Fields window.

Table 1-2: *Maintain Adhoc Query Field Parameters (continued)*

Parameter	Description
Close	The Close button is used to close the Maintain Adhoc Query Fields window once field attributes have been specified. If the Apply button wasn't clicked prior to this button, then the user will be prompted to save changes.
Help	The Help button is used to access system help. If clicked from this window, then help will provide assistance for this specific window once it has launched.
Apply	The Apply button is used to apply changes immediately prior to closing out of this window.

How to Format a Field

1. In the **Update Query** or **Add New Query** window, click the Fields tab ([Figure 1-4 on page 12](#)).
2. Click a **Column Order** number that represents the field. The hand icon will point to the selected field.
3. Click the **Update** button. The Maintain Adhoc Query Fields window is displayed ([Figure 1-6 on page 14](#)).
4. Make appropriate selections by using down arrows when applicable and/or typing text into available text boxes.
5. Click the **Close** button. Users will be prompted to save any new changes.



You can click the **Apply** button prior to closing to avoid the **Save** prompt.

POINTING A FIELD TO A LOOKUP

Lookups allow fields that would normally display as a value to display as text instead. For instance, the Division field is typically a "numeric" field, meaning that a value like "1" or "2" displays representing company divisions. However, if the Division field is pointing to a Lookup table, then it would allow the field to display as text like "Northeast" or "Southwest" instead of data value.

How to Point a Field to a Lookup

1. In the **Update Query** or **Add New Query** window, click the **Fields** tab.
2. Click the **Column Order** number that represents the field. The hand icon will point to the selected field.
3. Click the **Update** button.
4. Select the appropriate table name from the **Lookup** drop-down list near the bottom of the window.
5. Click the **Close** button. Users will be prompted to save any new changes.



You can click the **Apply** button prior to closing to avoid the **Save** prompt.

CREATING CALCULATIONS

Calculations are mathematical equations that are added to queries. Popular equations include sums, averages, percent to sales, and percent to transactions. They are created when an existing field is summed together for a given time frame, making it an aggregate field and also when fields are used together in a calculation to create a new field. It is common to create a calculation when a particular field doesn't exist in a table, for example "average sales".

Calculations that are created and added to a query as an additional field require additional steps such as creating a column name and identifying attributes accordingly, in addition to setting up the mathematical equation. Calculated (aggregate) fields are displayed on the Fields tab with a double cylinder icon instead of a single cylinder icon next to the field name.

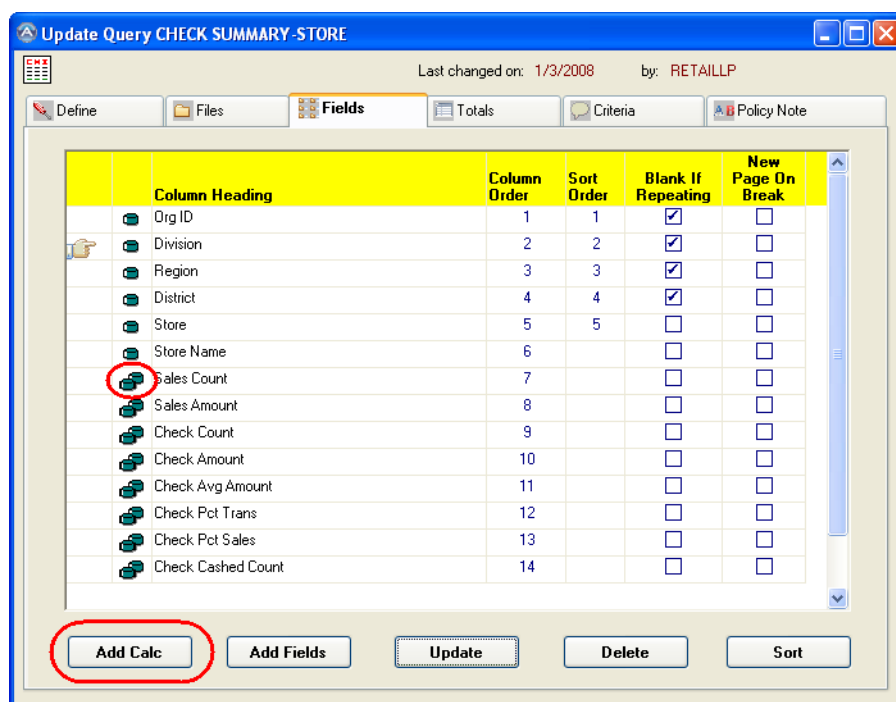


Figure 1-7: Update Query - Add Calc

How to Create an Aggregate Field

1. Click the **Fields** tab on the **Update Query** or **Add New Query** window.
2. Select the **Column Order** number that represents the field to be summed.
3. Click the **Update** button.
4. Click the **Function** down arrow and select SUM to add the SUM function to this field. In the Formula field, replace the "x" with the field name being summed by either deleting the X and moving the parenthesis or selecting the field name and using cut and paste. Verify that the field name is now enclosed in a set of parenthesis.

The Sum function can also be added manually by typing SUM at the beginning of the field name and then enclosing the field name in a set of parenthesis.



*Right click a highlighted field in the **Formula** text box and a shortcut menu will appear allowing users to select: Sum, Count, Max, Avg, or Min.*

Maintain Adhoc Query Fields

Database Tables: POS Statistics

Database Fields:

Description	Name
Alcohol Amount	ALCOHOL AMOUNT
All Lines Voided Count	ALL LINES VOIDED COU
Batch Number	BATCHNO
Bottle Slip Cashed Amount	BOTTLESIP CASHED A
Bottle Slip Cashed Line Count	BOTTLESIP CASHED L

Functions: Convert(type,x) Operators: +

Create this Field with:

☐ Database fields and functions ☒ Aggregate database functions ☐ Report columns and functions

Formula: SUM(POS_STATISTICS.SALES_COUNT)

Data Type: Numeric Column Width: 10 Hide: ☐

Align: Center Format: ###0

Column Headings: Sales Display Negative in: [RED] Lookup:

Buttons: Add, Close, Help, Apply, Colors and Fonts, Apply Formatting From Data Dictionary

Figure 1-8: Create Aggregate Field

5. Click the **Apply** button.
6. Click the **Close** button. In the **Fields** tab, a double cylinder icon is now displayed next to the field name indicating that this field is now an aggregate field (Figure 1-9).

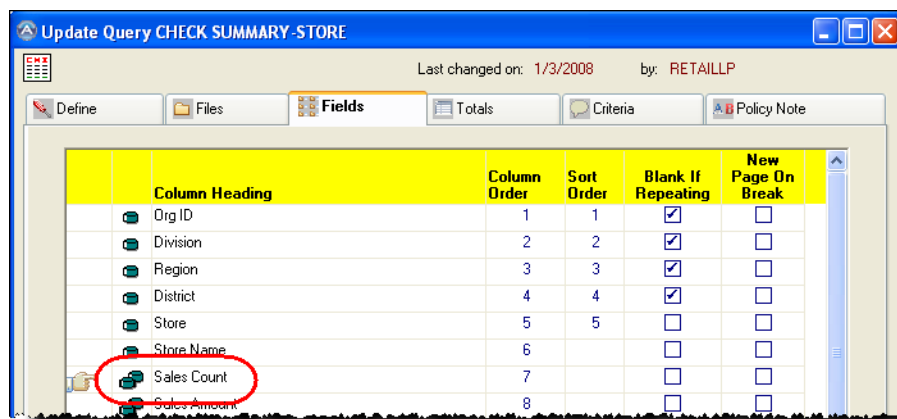


Figure 1-9: Calculated Field

How to Create a Calculation

1. Click the **Fields** tab on the **Update Query** or **Add New Query** window.
2. Click the **Add Calc** button.
3. Click the **Database Tables** down arrow and select the table (file) that contains the fields being used in the calculation.
4. Scroll through the list of fields in the **Database Fields** list, and double click on the appropriate field(s) required in the calculation. The field(s) will appear in the Formula text box.



Right click a highlighted field in the **Formula** text box and a shortcut menu will appear allowing users to select: Sum, Count, Max, Avg, or Min.

5. Add the appropriate functions and/or operators to calculate the correct mathematical expression. The function and/or operator can be typed or the **Functions** or **Operators** down arrow can be used to make specific selections.

Maintain Adhoc Query Fields

Database Tables: POS Statistics

Database Fields:

Description	Name
Alcohol Amount	ALCOHOL AMOUNT
All Lines Voided Count	ALL LINES VOIDED COU
Batch Number	BATCHNO
Bottle Slip Cashed Amount	BOTTLESLIP CASHED A
Bottle Slip Cashed Line Count	BOTTLESLIP CASHED L

Functions: Convert(type,x) Operators: /

Create this Field with:

☐ Database fields and functions ☒ Aggregate database functions ☐ Report columns and functions

Formula:

SUM(POS_STATISTICS.CHECK_AMOUNT/POS_STATISTICS.CHECK_COUNT)

Data Type: Numeric Column Width: 12 Hide: ☐

Align: Center Format: Local Currency

Column Headings: Check Display Negative in: [RED]

Lookup:

Colors and Fonts

Apply Formatting From Data Dictionary

Buttons: << Prev, Next >>, Add, Close, Help, Apply

Figure 1-10: Calculated Field

6. Click the **Data Type** down arrow and select numeric for a calculation.
7. Click the **Alignment** down arrow and select either Center, Left or Right.
8. Use the **Column Heading** boxes to type a header name that will appear at the top of the report, identifying a column of data.
9. In the **Column Width** box, type a desired column width.
10. Click the **Format** down arrow and select an appropriate format. Remember to select the Percent format in creating a % calculation.
11. Click the **Apply** button when done making all selections.
12. Click the **Close** button.

Law of Operators

Operator:	Used For:	Example
+	Addition	Credit Card Dollars + Cash Dollars
-	Subtraction	Sales Dollars - Credit Card Dollars
*	Multiplication	Quantity * 100
/	Division	Sales Dollars / Sales Units

If there is a combination of operators used in a mathematical equation, then Multiplication and Division will be calculated first, followed by Addition and Subtraction calculations. If there are multiple multiplication, division, addition and subtraction operators within the same equation, then the calculations will be performed in the order that they occur in the equation within the law of operators.

Parentheses are used to override the law of operators. If an equation requires addition to be calculated prior to the division, then the addition portion of the equation needs to be surrounded by a set of parentheses. For example:

Return & Exchange Dollars / (Return & Exchange Dollars- Cash Refund Dollars)
 500 / (500 - 300) = 2.5

The answer would have been -299 without the parentheses.

Common Functions

Function:	Function Example	Explanation
ABS	ABS(-4) = returns 4	Changes negative value to a positive value
AVG	AVG(tender_amount)	Returns the average tender amount
COUNT	Count(emp_ID)	Returns the number of non-null employee ID rows
DAYNAME	DayName(2008-09-01)	Returns the Day Name for 09-01-2008, "Wednesday"
IF	If(tender_total < 0, "invest", "OK")	If tender is less than 0, the answer is "invest" If tender is not less than 0, the answer is "OK"
MAX	Max(4,7)	Returns the maximum value from the set (7 in this case)
MIN	Min(4,7)	Returns the minimum value from the set (4 in this case)
SUM	Sum(tender_amount)	Returns the sum of tender amounts for each store, cashier
TODAY	Today()	Returns the current system date

CREATING SUBTOTALS

The **Totals** tab is used to set up subtotal rows. Subtotal rows are used to sum up columns of information for desired non-aggregate fields such as "store". For example, a subtotal for cashier activity can appear for each store, allowing subtotals to display at the store level. The following table describes each of the elements available on this tab:

Column Heading	Break On	Total This Column	Name of Total Field	Formula for Total Field
Org ID	<input type="checkbox"/>	<input type="checkbox"/>		
Division	<input type="checkbox"/>	<input type="checkbox"/>		
Region	<input type="checkbox"/>	<input type="checkbox"/>		
District	<input type="checkbox"/>	<input type="checkbox"/>		
Store	<input type="checkbox"/>	<input type="checkbox"/>		
Store Name	<input type="checkbox"/>	<input type="checkbox"/>		
Sales Count	<input type="checkbox"/>	<input checked="" type="checkbox"/>	[W]	
Sales Amount	<input type="checkbox"/>	<input checked="" type="checkbox"/>	[Z]	
Check Count	<input type="checkbox"/>	<input checked="" type="checkbox"/>	[A]	
Check Amount	<input type="checkbox"/>	<input checked="" type="checkbox"/>	[B]	
Check Avg Amount	<input type="checkbox"/>	<input checked="" type="checkbox"/>		[B]/[A]
Check Pct Trans	<input type="checkbox"/>	<input checked="" type="checkbox"/>		[A]/[W]
Check Pct Sales	<input type="checkbox"/>	<input checked="" type="checkbox"/>		[B]/[Z]
Check Cashed Count	<input type="checkbox"/>	<input checked="" type="checkbox"/>	[E]	
Check Cashed Amount	<input type="checkbox"/>	<input checked="" type="checkbox"/>	[F]	
Check Cashed Avg Amount	<input type="checkbox"/>	<input checked="" type="checkbox"/>		[F]/[E]

Figure 1-11: Update Query - Totals Tab

Break On

Subtotals are calculated whenever the value in this field changes (breaks). For example, selecting this option for STORE would cause subtotals to be created for each change in Store Number.

Total this Column

Needs to be selected in order to sum up that field. For example, if the Sales Total field is the field being summed in the subtotal row, the Sales Total field needs to be selected in this column.

Name of Total Field

It is necessary to name fields that are being used in calculations other than the SUM function. It is recommended that the names are kept simple like using the letters in the alphabet as shown below. Each field needs its own unique name and the name needs to be surrounded by straight brackets.

Formula for Total Field

It is necessary to duplicate the formula for created calculations, if they are not standard SUM functions in order to see the correct results for calculated fields at the summary level. Otherwise, these columns will be summed instead of calculated.

How to Create a Subtotal for a Summed Field

1. Click the **Totals** tab on the **Update Query** or **Add New Query** window (Figure 1-11).
2. Click applicable "**Break On**" check boxes to show subtotals at each change for these fields.
3. Click applicable "**Total This Column**" check boxes. The fields that are checked in this column will display a subtotal for that field at each break that has been checked.
4. Name of **Total Field** and **Formula for Total Field** are not required in order to show summed subtotals at each break.

How to Create a Subtotal for a Calculated Field (other than SUM)

1. In the **Update Query** or **Add New Query** window, click the **Totals** tab (Figure 1-11).
2. Check the applicable **Break On** check boxes to show subtotals at each change for an identified field.
3. Check the applicable **Total This Column** check boxes. The fields that are checked in this column will display a calculated subtotal for that field at each break that has been checked.
4. Type a name to represent the field that is being used in a calculation in the **Name of Total Field** box. The name must be typed within a set of straight brackets ([]) without any spaces.



We recommend keeping field names simple by using the letters of the alphabet. However, other text names can be substituted.

In the following example: Average Sales Dollars = Sales Dollars / Sales Units:

Sales Dollars has the field name **[A]** in this column

Sales Units has the field name **[B]** in this column



To display a negative value as a positive value, use the ABS (Absolute Value) function. This is particularly helpful when reviewing percentages of refund activity to sales activity.

5. In the **Formula for Total Field** column, type the formula that needs to be calculated in the subtotal row.

In the following example, the Average Sales Dollars formula would be:

[A]/[B]

[A] represents Sales Dollars

[B] represents Sales Units

SPECIFYING CRITERIA

The **Criteria** tab is used to set up filter options before running the query thus limiting the data retrieved. The various filter options include prefiltering using non-aggregate field criteria, prefiltering by creating parameters (variables) and permanent filters created using field or aggregate criteria built into the query. For example, if Store Number is selected as a prefilter field, then Users can retrieve data for specific store numbers instead of the entire organization prior to running the query.

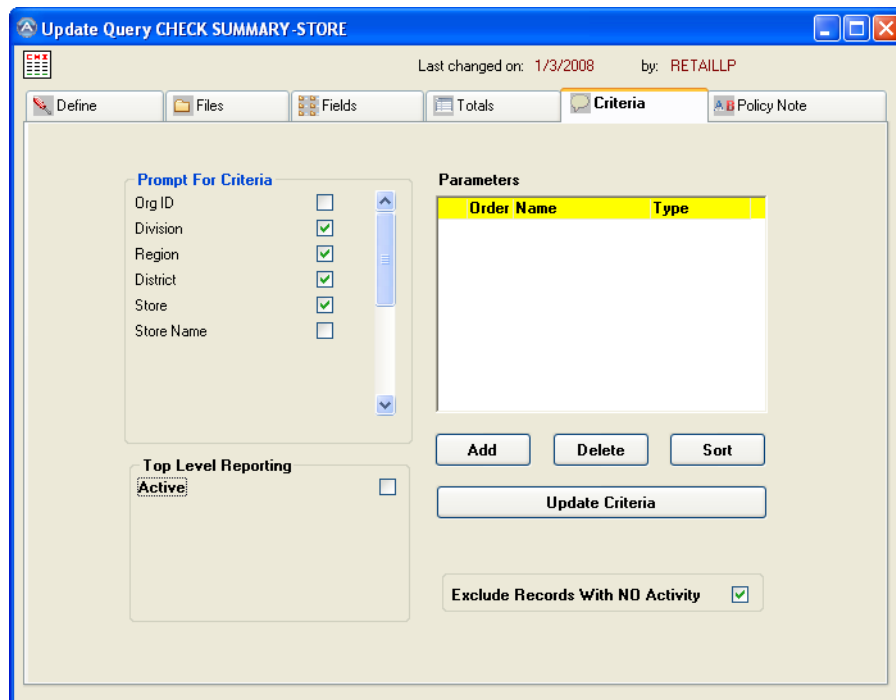


Figure 1-12: Update Query - Criteria Tab

The following table describes the functions on the **Criteria** tab:

Prompt for Criteria	Fields that are listed are non-aggregate fields that are used in the query. When a check box is selected for a listed field, then that field will appear in the "Specify Criteria" section of the Run window as a prefilter option. If a field is pointing to a Lookup table, then the field will appear as a drop down list in the run window when checked for "Prompt for Criteria".
----------------------------	---

Parameters

Parameters are created by using the Add button to create a parameter name and then by using the Update Criteria button to set up the parameter expression. Parameters allow users to indicate variables in the Run window as a method of prefiltering queries. For example, in a refund parameter, the user can type in a refund value and run the query and then change the value the next time the query is run.

Permanent Filters

Permanent filters are created by using the Update Criteria button. The following are 2 examples of permanent criteria that can be built into a query:

Region = 'Northeast'

When the query is run, it will only return results for the Northeast region.

Refunds < -50

When the query is run, it will only return data for refunds greater than \$50.00 and ignores refunds of \$49.99 or less.

Top Level Reporting

Check the check box to activate this option for the run window. Top level reporting allows users to run reports for a specified level of data.

Exclude Records with No Activity

Check the check box to prevent activity from displaying in the report if all of the field data is equal to zero.

How to Create a Permanent Filter

1. Click the **Criteria** tab on the **Update Query** window or **Add New Query** window (Figure 1-12).



Field Criteria Tab: Use this tab to create filters for non-aggregate fields (fields that are not calculated).

Aggregate Criteria Tab: Use this tab to create filters for aggregate fields (fields that are calculated).

2. Click the **Update Criteria** button.

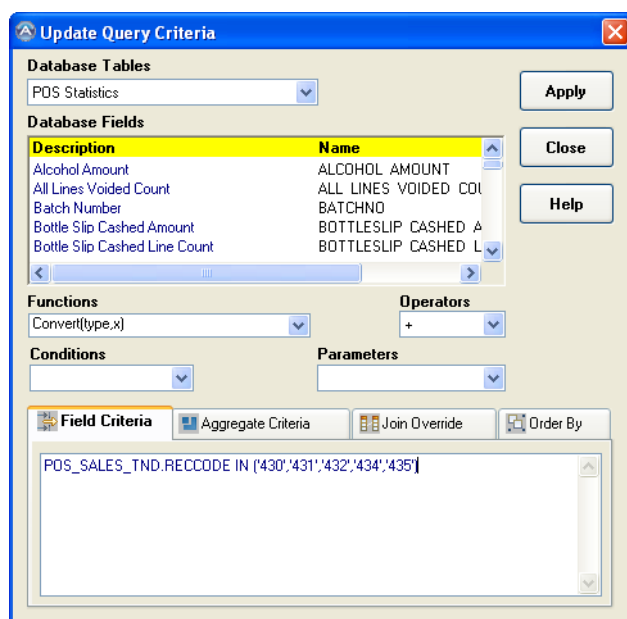


Figure 1-13: Update Criteria

3. Click the **Database Tables** down arrow and select the appropriate table that contains the fields to filter on.
4. Double click the field name that is being used for the filter.
5. Continue to set up the mathematical expression for the filter by typing or selecting an operator (>, <, +, -, *, /, etc).
6. Type in the necessary criteria. For example, if the query is meant to only display specific Rec Codes, then the filter expression might read:



If the criteria is NOT a Data Value, then it needs to be in a set of single quotation marks (' ').

7. Click the **Apply** button.
8. Click the **Close** button.

How to Create a Parameter

1. Click the **Criteria** tab on the **Update Query** or **Add New Query** window (Figure 1-12).
2. Click the **Add** button.
3. In the **Name** text box, type a parameter name (see right). For example, "Sales Amount >". This is the name that will appear in the parameter section of the Run window.
4. Click the **Type** down arrow and select Character, Numeric, Date or Time.
5. Click the **Update Criteria** button.
6. Click either the **Field Criteria** tab or the **Aggregate Criteria** tab.



Aggregate fields need to be summed (or applicable calculation) within the filter expression on the aggregate tab.

7. Click the **Database Tables** down arrow and select the appropriate table that contains the field that will be used to identify the parameter.
8. Double click on the field name that is being used for the parameter. For example, the Net Sales Total field would be used to determine "Sales Total >".
9. Continue to set up the mathematical expression for the parameter by typing or selecting an operator (>, <, +, -, *, /, etc).
10. Click the **Parameters** down arrow and select the parameter name that was previously created. It will appear in the criteria box with a preceding question mark (?).
11. Click the **Apply** button.
12. Click the **Close** button.

POLICY NOTES

Policy Notes can be used as guidelines for policies and procedures. Once they are created through the Administration menu, they can then be attached to queries via the Policy Notes tab. For example, the Notes remind users of a specific store policy such as refunds and the action steps to be taken when exceptions arise.

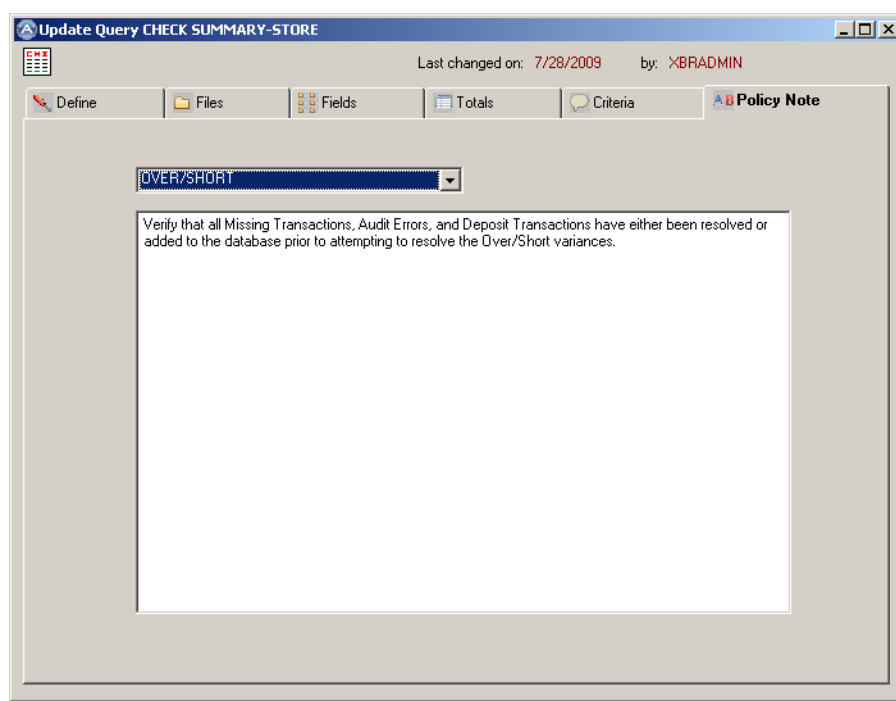


Figure 1-14: Policy Notes

How to Add a Policy Note

1. Click the **Policy Notes** tab on the **Update Query** or **Add New Query** window.
2. Click the **Policy Note** down arrow and select the appropriate policy note name.

Key Points

As the query is being built or modified:

- System Administrators or System Managers can create new Policy Notes for users to attach to a query.
- Click the **Run** button to periodically view the results of the query build.
- Click the **Save** button frequently to avoid losing any unsaved work. Once the query has been saved, it will be listed in the appropriate classification in the Queries list.

CHAPTER

2

Building Query Links

OVERVIEW

Query links allow users to:

1. Retrieve additional data results from one query to another.
For example, when reviewing data from a Cash Refund by Cashier query, if a cashier is displaying higher than normal cash refund activity, then the user can link to another query like, Cash Refund Details, for more specific details regarding the suspicious activity.
2. Set up and view video footage. In addition to linking to another query, the user can link to video of a specific register/cashier at a specific time frame. The user can also temporarily video shortcuts for later viewing and if necessary, save the video shortcuts for extended amount of time.

LEARNING OBJECTIVES

Upon completion of this section, you should be able to:

- Build links from one query to multiple other queries
- Identify values that will be passed from one query to another
- Indicate optional criteria that will reflect the outcome of the linked data

BUILDING LINKS TO QUERIES

The **Link** button is used to create links from one query to another. In order to build a link, the two queries need to have a least one common field shared between them. There are two procedures required when building a link to a query:

- Selecting a query to link to
- Indicating which fields to link on from one query to another

Links can be built at various levels. For instance, users can create links that will allow them to see activity at store level for all cashiers or create links that will allow them to see activity for a specified cashier only.

For example, please note Pam Heil's data in the following report, Discounts & Overrides - Cashier (Pam's price overrides are a count of 182 out of 217 sales transactions):

Store	Cashier	Name	Net Sales Count	Net Sales Total	SKU Count	Line Disc Count	Line Disc Total	Line Disc Put Sales	Line Disc Put SKU	Price Override Count	Price Override Total
9	9000213	Heil, Pam	217	\$11,342.92	503	31	(\$28.90)	-0.25%	6.16%	182	(\$1)
	9000190	Hartley, Terry	189	\$9,354.14	411	17	(\$49.41)	-0.53%	4.14%	171	(\$1)
17	17000070	Loughry, Emily	195	\$9,725.01	469	42	(\$164.74)	-1.67%	8.96%	146	(\$)
18	18000345	Marissa, Lauren	114	\$4,749.02	248	22	(\$76.84)	-1.59%	8.87%	140	(\$1)
	18000337	Mannen, Kc	120	\$5,640.98	272	14	(\$13.09)	-0.23%	5.15%	137	(\$)
17	17000162	Malhotra, Robert	109	\$6,733.20	296	10	(\$61.93)	-0.91%	3.38%	129	(\$)

Figure 2-1: Pam Heil's Data

User can create a link to view more specific data of Pam's price override activity by passing the following values:

- Store
- Cashier Number

The linked results will focus on Pam's cashier number in Store #9.

If the link is built passing only the store value, then all of the cashiers in Store #9, including Pam, will be displayed in the linked results.

How To Build a Link

1. Select the starting query. This is the query that will initiate the data.



2. Click the **Link** button. The **Link Adhoc Queries** window is displayed.



Figure 2-2: Link Adhoc Queries Window

3. In the **Link Adhoc Queries** window:
 - a. Click the **Add** button.
 - b. Click the **Library** down arrow and select the appropriate library the query to link to is stored in.
 - c. Click the **Query** down arrow and select the query name to link to.

4. Click the **Update** button. The **Link Field Maintenance** window is displayed.

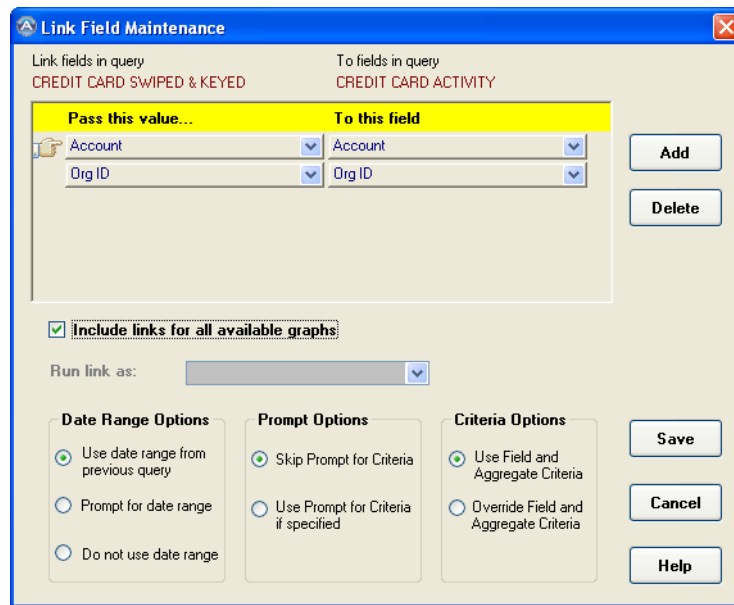


Figure 2-3: Link Field Maintenance

5. In the **Link Field Maintenance** window:
- Click the **Add** button.
 - Click the **Pass this value...** down arrow, which represents the initial query and select the field name that represents the value being recognized in both queries.
 - Click the **To this field** down arrow, which represents the linked query, and select the corresponding field name that represents the value.
6. Repeat Step 5 for as many fields needed to link on.
7. In the **Date Range Options** section of the **Link Field Maintenance** window, select one of the following:
- Select **Use date range from previous query** to view data from the same time frame as the prior query.
 - Select **Prompt for date range** to allow users to specify a different date range. For example, it may be helpful to view more history and patterns.
 - Select **Do not use date range** to return all of the available data in the database.

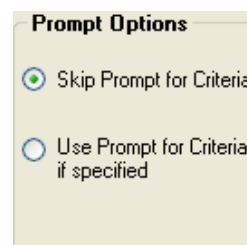
Date Range Options

☒ Use date range from previous query

☐ Prompt for date range

☐ Do not use date range

8. In the **Prompt Options** section of the Link Field Maintenance window, select one of the following:
- a. Select **Skip prompt for criteria** to bypass prefilter options for the query link.
 - b. Select **Use Prompt for Criteria if specified** to activate the Specify Criteria section of the Run window of the query when linking to allow users to prefilter the data.

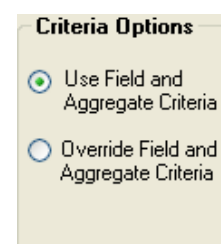


Prompt Options

☒ Skip Prompt for Criteria

☐ Use Prompt for Criteria if specified

9. In the **Criteria Options** section, select one of the following:
- a. Select **Use Field and Aggregate Criteria** to recognize existing permanent filters built on the linked to query.
 - b. Select **Override Field and Aggregate Criteria** to ignore permanent filters built on the linked to query.
10. Click the **Save** button on the **Link Field Maintenance** window.
11. Click the **Save** button on the **Link Adhoc Queries** window.



Criteria Options

☒ Use Field and Aggregate Criteria

☐ Override Field and Aggregate Criteria



If either the **Prompt for date range** option or **Use Prompt for Criteria if specified** option is selected then BOTH options are activated.

BUILDING LINKS TO VIDEO

Video Links

In order to review transaction videos in XBR, the system requires a link from an Adhoc query to the appropriate video.

Video Links can only be accessed from queries built at Detail data levels (Header data levels as well for Retail and Grocery users) and most likely include the following standard fields in the report build:

- Store
- Register
- Transaction Date
- Transaction Time
- Transaction Number

Users can link to a Detail level report, from any other data level, in order to view the media clip for a selected transaction(s) or they can run the applicable report directly from the Query List.



The System Administrator can create a video link for any query, the Analyst can only create video links for those queries that he/she owns, and the Read-Only user cannot create video links.

Use the following steps to create a video link.

1. Highlight the query you wish to link to a video and click the **Link** icon on the side toolbar. The system opens the Link Adhoc Queries window.

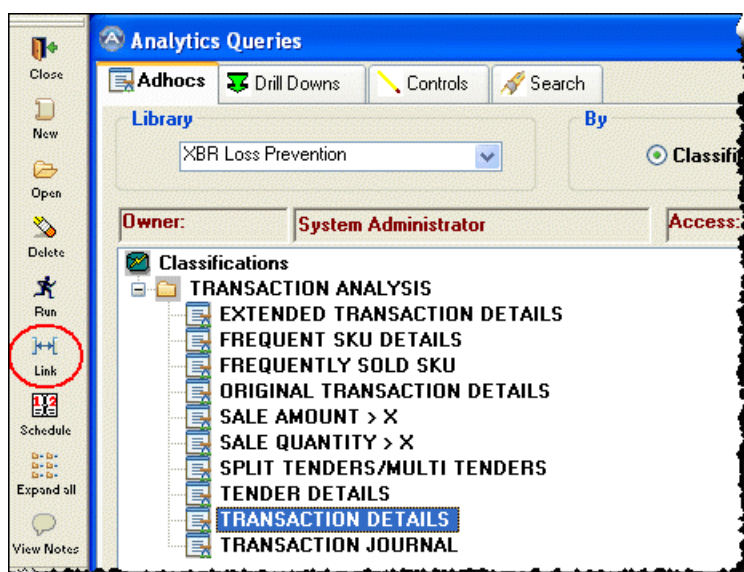


Figure 2-4: Video Link - Query Selection

2. At the Link Adhoc Queries window, click **Video**.

The system opens the Link Field Maintenance window.

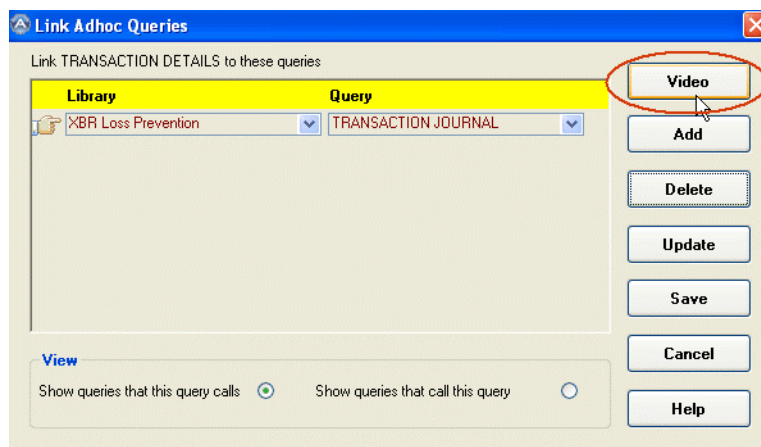


Figure 2-5: Link Adhoc Queries Window

3. At the Link Field Maintenance window, the system automatically displays each field required for linking in the Video Link area (right side) of the window. You must select the same fields in the query area (left side) so that they match what is selected in the video area. Click **Save** to retain your changes.

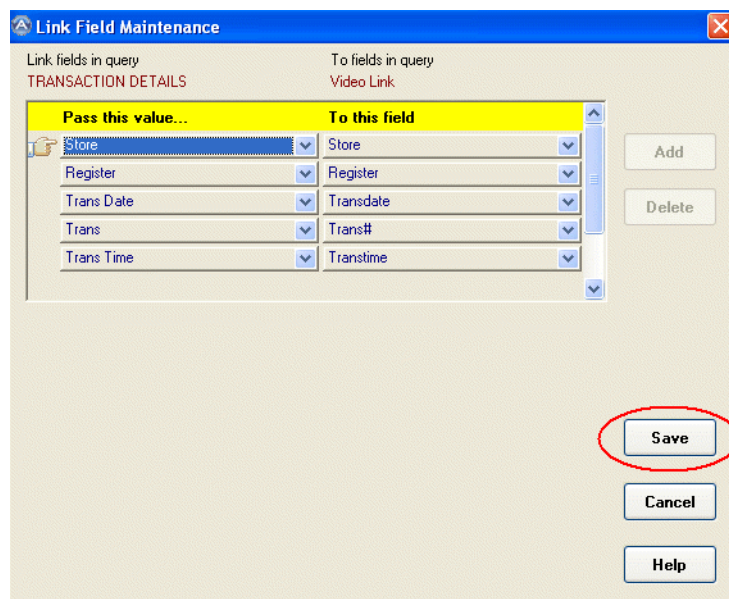


Figure 2-6: Link Query to Video Link Window

4. Click **Save** in the Link Adhoc Queries window to return to the query list. You will not be able to save the query if the fields are not matched properly. If all of the fields required for linking are not available in the query, you will need to update the query to include those fields before you can create a successful link.

CHAPTER

3

Building New Drill Down Queries

OVERVIEW

Drill Downs can be created as a new query by following the steps in Chapter 1 or by converting an existing Adhoc into a Drill Down query. When a Drill Down query is created, an additional tab appears in the Maintenance window allowing users to establish specific Drill Down elements, like a Drill Down path.

If the user converts an Adhoc in an effort to create a new Drill Down query, then the Save As command is used in the process. The **Save As** command allows the user to make a copy of the Adhoc query prior to converting it to a Drill Down. The new Drill Down query must have a unique name; although it may be a different query type, if it's within the same library as an Adhoc or a Control, then it still needs a unique query name.

It is our recommendation to "convert and Adhoc" into a new Drill Down query rather than build a new one. Converting saves the end user a lot of steps in the process as the main files and fields are already selected; any custom criteria as well as query links are also copied over as part of the process and do not need to be redone.

Drill Downs work off what we refer to as a Drill Down Path. The Drill Down path is the hierarchy of levels that the query will drill down within as the user is running this query type. Drill Down paths can be created as general paths from the main file or from the non-aggregated fields in a query build. Most Drill Down paths follow the Operational hierarchy of a corporate office.

LEARNING OBJECTIVES

Upon completion of this section, you should be able to:

- Test the Adhoc prior to converting
- Convert Adhocs to Drill Downs
- Select appropriate Drill Down paths

CONVERTING ADHOCS TO DRILL DOWN QUERIES

A Drill Down query is created with at least one aggregate (sums, averages, percents) field but works best with many aggregate fields. These aggregate fields display data for each level identified in the Drill Down path. A Drill Down path can be the organization's hierarchy structure or it can be a different path like the levels of store volume (high, normal, and low) or levels of risk for theft (high, medium, low). The most common drill down path follows that of the organization's store operations hierarchy, such as Division, Region, District, Store and Cashier.

For example, in a potential Drill Down query, the following aggregate fields will appear summarized at each of the levels of the Store Operations hierarchy:

- Total Sales Dollars
- Total Sales Count
- Average Refund Dollars
- Total Refund Dollars
- Total Refund Count
- Average Refund Dollars

The report will display data for the above fields at each level identified in the selected Drill Down path. If the path followed a typical Division, Region, District, Store, Cashier/Associate path, then the summarized data would appear accordingly:

Division	Data would be displayed showing summarized totals for each division for each field.
Region	Data would be displayed showing summarized totals for each region for each field.
District	Data would be displayed showing summarized totals for each district for each field.
Store	Data would be displayed showing summarized totals for each store for each field.
Cashier	Data would be displayed showing summarized totals for each associate for each field.

Chapter 3: Building New Drill Down Queries

In order to convert an Adhoc to a Drill Down query, the Adhoc must have at least one aggregate field. Adhocs are converted to Drill Downs by opening the Adhoc and performing a Save As function.

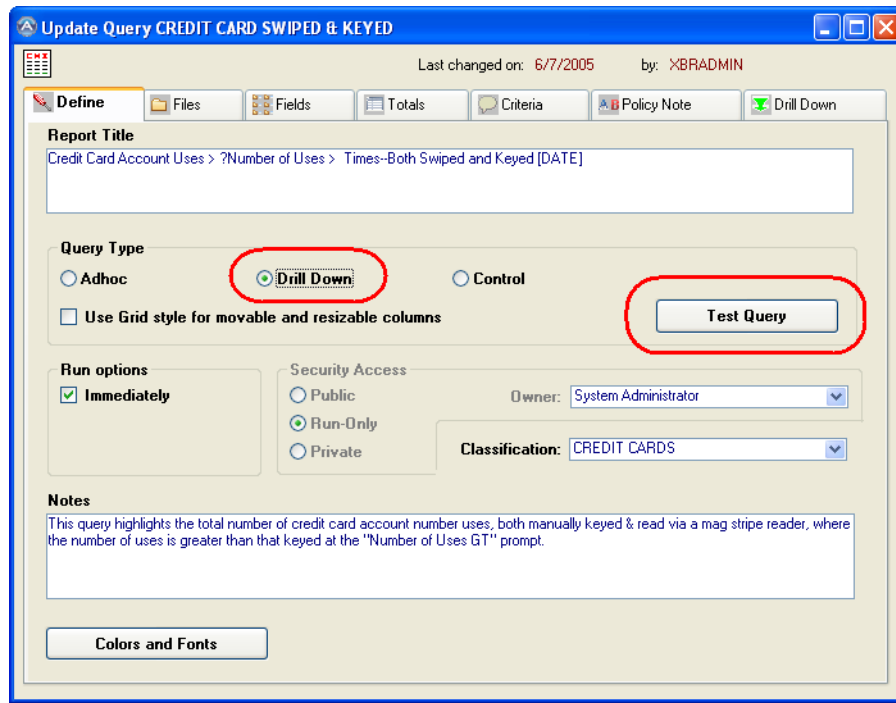


Figure 3-1: Convert Adhoc

Once the Drill Down or Control button is selected, the Test Query button is used to test the Adhoc after changing the query type.

How To Convert an Adhoc to a Drill Down

1. Select the Adhoc query from the Query list and click the **Open** button from the Window toolbar.



TIP

*Right-clicking a query name and selecting **Open** can be used instead of the **Open** button.*

2. On the Define tab, select the **Drill Down** radio button.
3. Click the **Test Query** button.
4. Click the **Save As** button.
5. Type a Drill Down query name. The name must be unique and therefore different from the original Adhoc name.



TIP

Many users add the letters "DD" to the end of the existing Adhoc name to identify the query as a Drill Down to keep the new query name unique.

SELECTING A DRILL DOWN PATH

When an Adhoc is converted to a Drill Down, a new **Drill Down** tab appears in the **Update Query** window. This tab is used to define the Drill Down levels used in the query. Most drill down paths identifies the various levels that make up an organization's hierarchy. The standard hierarchy used in this training guide is Division - Region - District - Store - Associate. Other common levels may be:

Store Level Paths that differentiate stores by sales volume, such as high, normal and low

LP Level Paths that differentiate Loss Prevention risk categories by store, such as high risk, medium risk and low risk

Update Query DISCOUNTS AND PRICE OVERRIDES

Last changed on: 9/22/2004 by: FIELDLP

Define Files Fields Totals Criteria Policy Note **Drill Down**

☐ Use a Predefined Drill Down Path:

Field Name	Column Order	Summary Level	Key For Next Level
Division	1	1	<input checked="" type="checkbox"/>
Region	2	2	<input checked="" type="checkbox"/>
District	3	3	<input checked="" type="checkbox"/>
Store	4	4	<input checked="" type="checkbox"/>
Store Name	5	4	<input type="checkbox"/>
Cashier	6	5	<input checked="" type="checkbox"/>
Cashier Name	7	5	<input type="checkbox"/>
Job Code	8	5	<input type="checkbox"/>

Figure 3-2: Update Query - Drill Down Tab

- Check the **Use a Predefined Drill Down Path** check box to use a predefined drill down path. Predefined drill down paths are generic paths that have been created based on the Main file being used to build the query.
- The **Field Name** column displays all of the non-aggregate fields that exist in the Drill Down query.
- The **Column Order** represents the order in which the field is located on the Fields tab.
- The **Summary Level** identifies which fields will display at each level within the hierarchy. Note that multiple fields can display at the same level. For example, Cashier Number and Cashier Name would likely be displayed together.

- Check the **Key for Next Level** check box to flag the field as a unique level within the hierarchy. This tool allows users to link down to the next level displayed when running the Drill Down.

How To Create Drill Down Levels

1. Click the **Drill Down** tab on the **Update Query** window.
2. In the **Summary Level** column, type in the number that represents the level that the field should display in. Each field must have a value. Some values will be duplicated in order to see multiple fields at the same level.

For example, the following fields may share the same level:

- Cashier Number
- Cashier Name
- Job Code
- Watch Status

This will ensure that at this level, all of this information will be displayed in the same view.



If there is a field required that is not represented on this list, click the **Add Fields** button from the **Fields** tab. Verify that the field is a non-aggregate field.

3. In the **Key For Next Level** column, check the appropriate check boxes to flag each unique level within the hierarchy. This only refers to fields that represent a new level of data within the defined hierarchy; therefore, some fields will remain unchecked.
4. Click the **Save** button from the Windows toolbar.
5. Click the **Close** button from the Windows toolbar.

Predefined Drill Down paths are paths that are built off of available fields from a given table. These paths can be used for Drill Down queries instead of having to build the various levels independently. For example, standard fields from the Store Master table in combination with standard fields from the POS_Statistics Table and Employee Master Table might include Division, Region, District, Store Number and Cashier Number. These fields can then be used to create a generic Drill Down path named "Operations". When Drill Downs are created, users can select to use the "Operations" Drill Down path or they can create a custom drill down path using the available non-aggregate fields available from that query.

When Drill Down paths are created as predefined paths, there is a main file associated with the path name. When this main file is also the main file in a query, then the path name will be available as a predefined path name. Supplemental files can be used to include additional non-aggregate fields not affiliated with the main file, such as Employee Name from the Employee Master file.

How To Select a Predefined Drill Down Path

1. Click the **Drill Down** tab in the **Update Query** window.

Update Query CREDIT CARD SUMMARY

Last changed on: 9/14/2007 by: SYSTEM MANAGER

Define Files Fields Totals Criteria Policy Note **Drill Down**

☒ Use a Predefined Drill Down Path: Loss Prevention-Cashier

Starts at: Division Ends at: Cashier

Summary Level	Field Name	Key For Next Level
Division	Division	<input checked="" type="checkbox"/>
Region	Region	<input checked="" type="checkbox"/>
District	District	<input checked="" type="checkbox"/>
Store	Store	<input checked="" type="checkbox"/>
	Store Name	<input type="checkbox"/>
	Watch Date	<input type="checkbox"/>
	Watch Notes	<input type="checkbox"/>
	Watch Status	<input type="checkbox"/>
Cashier	Cashier	<input checked="" type="checkbox"/>
	Cashier Last Name	<input type="checkbox"/>
	Cashier First Name	<input type="checkbox"/>

Figure 3-3: Predefined Drill Down Path

2. Check the **Use a Predefined Drill Down Path** check box to activate this option.
3. Click the **Use a Predefined Drill Down Path** down arrow and select a path name.
4. Click the **Starts at** down arrow and select the predefined level to start the Drill Down query at.



Although a Drill Down path can have multiple levels in the hierarchy, not all of the levels need to be represented in the report. The **Starts at** and **Ends at** options allow for this type of customization.

5. Click the **Ends at** down arrow and select the predefined level to end the Drill Down query at.
6. Click the **Save** button in the Windows toolbar.
7. Click the **Close** button in the Windows toolbar.

C H A P T E R

4

Creating New Control Queries

OVERVIEW

Control Queries can be created as a new query by following the steps in Chapter 1 or by converting an existing Adhoc into a Control query. When a Control query is being created, an additional tab will appear in the Maintenance window that allows users to specify Control query requirements like a Control Target and at least one Control Point.

If a user converts an Adhoc in an effort to create a new Control query, then the **Save As** command is used in the process. The **Save As** command allows the user to make a copy of the Adhoc query prior to converting it to a Control. The new Control query must have a unique name; although it may be a different query type, if it's within the same library as an Adhoc or a Drill Down, then it still needs a unique query name.

It is our recommendation to "convert an Adhoc" into a new Control query rather than build a new one. Converting saves the end user a lot of steps in the process as the main files and fields are already selected; any custom criteria as well as query links are also copied over as part of the process and do not need to be redone.

Control Queries require the user to identify a Control Target. The Control Target becomes the focus of questionable data. Most of the existing Control queries point to the Cashier as a Control Target but the control queries could also point to a store or an account number as well as other optional targets.

The following rules apply to building Control Queries:

- The query needs at least one aggregated field
- All parameter references need to be removed from the query build, if applicable
- There needs to be a Control Target identified

There are two types of Control Queries: Control Points and Control Groups. The Control Point uses one aggregated field to measure statistical activity amongst the control target. A target "pops" as an exception if the target exceeded the set threshold for the control point. The Control Group combines up to 10 Control Points in one query build, giving the user access to a target that "pops" as an exception for multiple aggregated fields in one report run. The Control Query itself, identifies the tables, fields and criteria that will be used for the Control Points and Control Groups.

Each control point has a threshold value that determines whether a target will populate as an exception. The threshold is maintained by the System Administrator, System Manager or the Query owner. The threshold can remain static to the entire organization or it can be customized to accommodate different areas of the business. For example, one threshold can be set for "high shrink stores" and a different threshold can be set for "low performing" stores.

LEARNING OBJECTIVES

Upon completion of this section, you should be able to:

- Test the Adhoc prior to converting
- Identify Control Targets
- Create Control Points and Control Groups
- Weigh Control Points within a Control Group
- Customize thresholds chain-wide or for specific non-aggregate fields
- Indicate alert criteria for Controls

CONVERTING ADHOCS TO CONTROL QUERIES

A Control Point query is made up of two components: a Control Query and a Control Point (or Group). The Control Query represents the available fields that can be used as measures for the Control Point. Each measure (Control Point) contains threshold and alert criteria. Aggregate fields are the only fields that can be used as measures for Control Points such as summed counts, summed totals, averages and percent to sales or transactions.

Control Queries and the Control Points are organized within a Queries classification on the Controls tab in the Queries window. The Queries classification needs to be expanded to access each of the Control queries and the Control query needs to be expanded to access each of the Control Points.

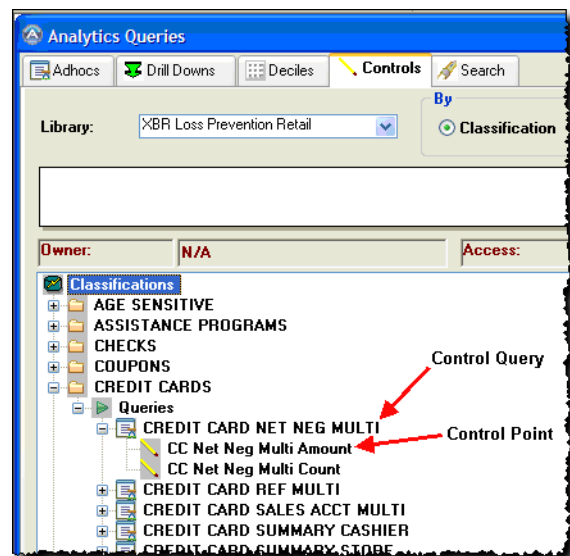


Figure 4-1: Control Query and Control Point

Control Query	Defines the query and contains the fields and criteria that are available to create control points from.
Control Point	Detects exceptions for a specific field from the Control Query that is considered a measure.
Control Group	A combination of control points that are weighed against each other in terms of riskiest to least riskiest control point.

How To Convert an Adhoc to a Control

1. Select the Adhoc query from the Query list and click the **Open** button.
2. Select the Controls radio button.

Update Query CREDIT CARD SWIPED & KEYED

Last changed on: 6/7/2005 by: XBRADMIN

Define Files Fields Totals Criteria Policy Note Controls

Report Title
Credit Card Account Uses > ?Number of Uses > Times--Both Swiped and Keyed [DATE]

Query Type
☐ Adhoc
 ☐ Drill Down
 ☐ Decile
 ☒ Control
 Test Query

Run options
☒ Immediately
☒ Offline

Security Access
☐ Public
☒ Run-Only
☐ Private

Owner: ADMIN1
Classification: CREDIT CARDS

Notes
 This query highlights the total number of credit card account number uses, both manually keyed & read via a mag stripe reader, where the number of uses is greater than that keyed at the "Number of Uses GT" prompt.

Colors and Fonts

Figure 4-2: Control Query - Define Tab

3. Click the **Test Query** button to verify that there are no errors when running the Adhoc.
4. Click the **Save As** button from the Windows toolbar.
5. Type a Control Query name.

It is strongly recommended that the query name contain the Control Target information. For example, if looking for excessive activity for cashiers, then the control Target would be the cashier. To indicate this on the Control Query, the name might read, "Refund and Exchange - Cashier". This helps differentiate a Control query that is used to detect activity at the cashier level versus a Control Query used to detect activity at another target level such as credit card or store number. The name must still be unique and therefore different from the original Adhoc name.

Enter new Control Query name

XBR Loss Prevention Retail

CC SWIPED

OK Cancel Help

6. Click the **Control** tab.

The **Control Target** sub tab is used to define the target. The target is the focus of the exception.

The **Control Points** sub tab is used to create the actual control points and to define thresholds.

The **Control Target** is the focus of the detected exception activity. Control targets are created ahead of time and have key fields associated with them to assist in detecting theft in key risk areas. For example, in a credit card control target, the credit card account number would be the key field for this target. If Stores were the target, then store numbers would be the key field for this target, making a store number a potential case for suspicious activity.

How To Select a Control Target

1. On the **Control Target** sub tab, click the **Target** down arrow and select a target.

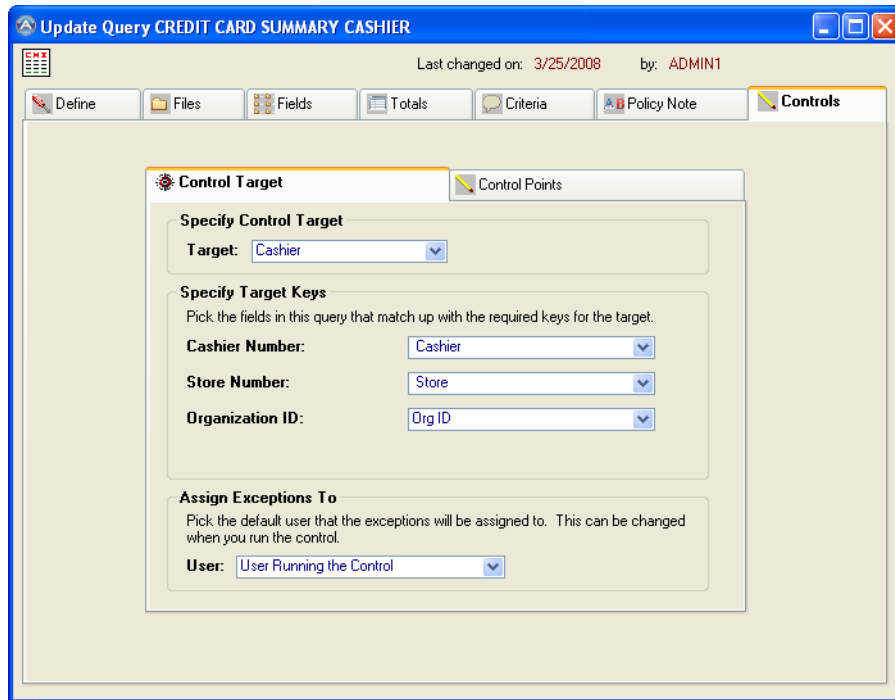


Figure 4-3: Control Target Sub-Tab

2. In the **Specify Target** section, click the down arrow for each displayed field. Select a matching field from the drop down list to establish a link to the key field for this target. For example:

Cashier # = Cashier Number Store # = Store Number



The **Control Target** keys will differ based on the selected Control Targets. For example, if Credit Card is selected as the target, then the key field will be the Credit Card Account Number.

- Click the **Assign Exceptions To** down arrow and select a default User view to store the detected exceptions. "User Running the Control" allows users to review their own exceptions on their own review screens.

The next step in converting an Adhoc to a Control is to define the Control Points by clicking on the Control Points sub tab. Control Points can be added to Control Queries once the Control Target has been identified. There are three key tabs to define new Control Points.

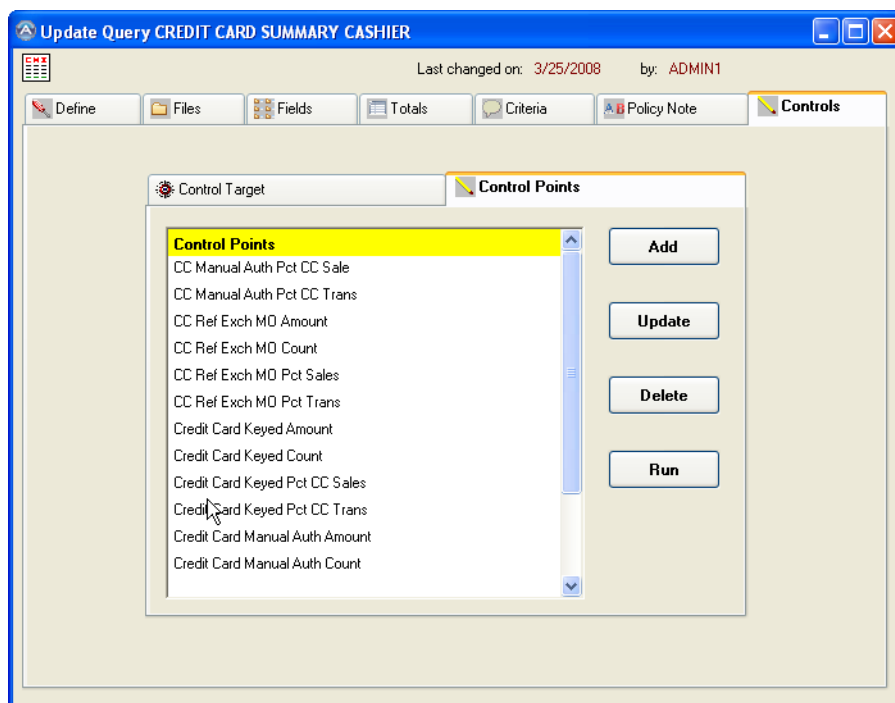


Figure 4-4: Control Points Sub-Tab

Define Tab

This tab is used to define the Control Point. A new control point must have a Control Name before Proact will allow users to select the Criteria or Links tabs.

Criteria Tab

This tab is used to set default and custom thresholds as well as alerts.

Links Tab

This tab allows users to build links between the control point and the Adhoc queries. This process allows users to investigate the detail of detected exceptions.

How To Create a Control Point

1. On the Control Points sub tab, click the **Add** button.

The screenshot shows the 'Control Point Maintenance' dialog box with the 'Define' tab selected. The 'Control Name' field contains 'CC Refund Multi Amount'. The 'Policy' dropdown is set to 'WEEKLY CASHIER COUNSELING'. The 'Policy' text area contains the following text: 'The following report highlights certain transactions types focusing on SALES PRODUCTIVITY and LOSS PREVENTION INDICATORS. Please conduct the following for those cashiers highlighted. 1. Research and review the areas within this report of any highlighted associate. 2. Determine potential root causes of the high occurrences (LP KPI's) or low occurrences (Productivity). IF YOU DETERMINE POTENTIAL THEFT MAY BE OCCURRING - CONTACT LOSS PREVENTION IMMEDIATELY 3. Have a discussion with the cashier to review policy and procedure for the areas in question. 4. Determine follow-up strategy to include potential re-training, suspension from the register, etc.' The 'Number of days to check back for history' field is set to '180'. The 'Notes' text area contains the text: 'Highlights cashiers with an excessive total amount of returns to the same credit card account number.' At the bottom are 'Save', 'Cancel', and 'Help' buttons. The top right shows 'Last changed on: 6/7/2005' and 'by: XBRADMIN'.

Figure 4-5: Add Control Point

2. On the **Define** tab, click the **Control Name** text box and type the name of the Control Point as it will be listed in the Queries list. For example, a control point that is designed to detect exceptions for cash refund amounts might be named "cash refund and exchange total" to help associate its name with its purpose.
3. **[OPTIONAL]** Click the **Policy** down arrow and select a policy note to attach to the control point.
4. Enter a value for the **Number of days to check back for history** option, if applicable. This option will depend on the length of time that transaction history is stored at your company.
5. Click in the **Notes** area and type in any applicable notes. These notes can be viewed in the Queries list when the control point name is highlighted.



Use the **Notes** to type the threshold values for control points. That way, analysts can view the thresholds prior to running.

6. Click the **Criteria** tab to set the thresholds.

Creating Thresholds

The **Criteria** tab consists of three sections, Criteria Levels, Default Criteria, and Alerts.

Control Point Maintenance

Define Criteria Links Last changed on: 6/7/2005 by: XBRADMIN

Criteria Level

DEFAULT

Default Criteria

Field	Condition	Threshold Value	Alert Value	And/Or
Tender Amount	<	[AVG][STDEV]		

☐ Attach policy notes to this alert
☐ Create an alert if there are more than [dropdown] previous occurrences in history
 Alert Message:

Add Criteria Delete Criteria

Save Cancel Help

Figure 4-6: Control Point Threshold

- The **Criteria Level** section is used to create custom criteria levels. Businesses that prefer to set thresholds based on business volume, can utilize this area to specify those levels and then indicate the preferred thresholds for each of the specified levels as well. For example, a high volume store might have a Cash Refund and Exchange Total threshold by cashier of -\$150.00 but a low volume store could be set at a threshold of -\$75.00.
- The **Default Criteria** area is where users select the fields that will be used as measures and then indicate thresholds and alert values accordingly.
- The **Alert** area allows users to create additional alerts based on a history of exception occurrences as well as attaching policy notes and alert messages.

How To Create Thresholds

1. Click the **Criteria** tab on the Control Point Maintenance window.



In the Criteria Level area, 'Default' refers to a standard for the entire organization. Thresholds can be customized for different areas of the organization by using the Add, Update and Delete buttons in the Criteria Level section at the top.

2. In the **Default Criteria** area, click the **Field** down arrow and select the field that will act as a measure for the control point.

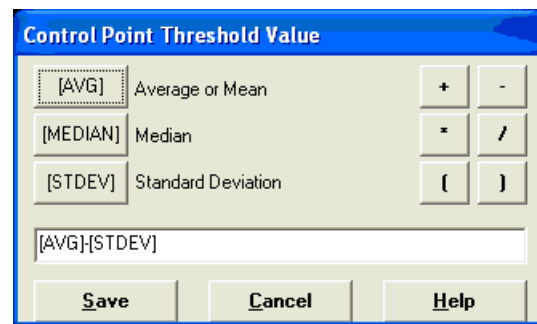
3. Click the **Condition** down arrow and select an operator that best matches the mathematical expression to detect exceptions.
4. Enter a value in the **Threshold Value** text box or double click the **Threshold Value** text box and use the **Control Point Threshold Value** window to create an automated calculation.
5. Click the **Save** button.
6. Close the **Control Point Maintenance** window.

How To Create Calculated Thresholds

1. In the **Control Point Maintenance** window, click the **Criteria** tab.

Please note that Threshold values are set at $AVG + STDEV$ for positive values like counts and $AVG - STDEV$ for negative values like refunds when Analytics is installed. You can however change them to suit your business needs.

2. Double-click the **Threshold Value** text box and use the **Control Point Threshold Value** window to create an automated calculation.
 - a. Click the **AVG**, **MEDIAN**, or **STDEV** buttons and operator buttons to create the necessary mathematical expression.
 - b. Click the **Save** button for the **Control Point Threshold Value** window.
3. Click the **Save** button for the **Control Point Maintenance** window.
4. Close the **Control Point Maintenance** window.



How To Create Custom Thresholds

Custom thresholds can be created for varying segments of the organization. For example, thresholds can be set differently for higher volume stores versus lower volume stores.

1. Click the **Criteria** tab on the **Control Point Maintenance** window.
2. Click the **Add** button from the Criteria Level section at the top.

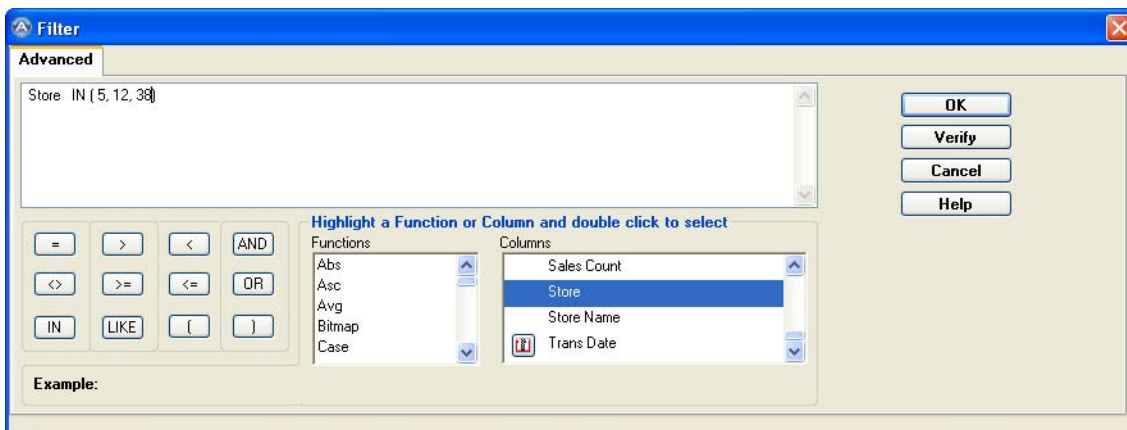


Figure 4-7: Custom Threshold - Filter

3. In the **Filter** window, double click the Field (Column) name so that it appears in the filter box.
4. Click or type the appropriate operator (< > = in).
5. Complete the filter by typing in the necessary value(s).
6. Click the **OK** button.
7. Select the Filter name that was just created.

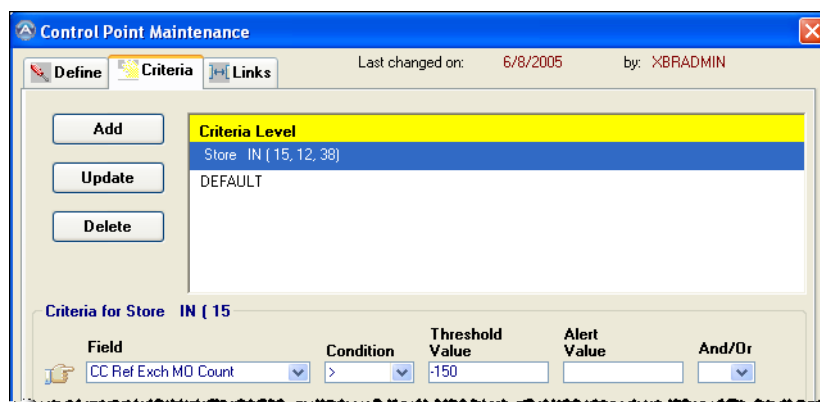


Figure 4-8: Custom Threshold - Value

8. Click in the Threshold Criteria box and type in a more realistic value for this specific group.

How To Create Alerts



If not already in the **Control Point Maintenance** window, then the Control Point needs to be opened first prior to creating alerts.

1. Click the **Criteria** tab on the **Control Point Maintenance** window.
2. For an alert value, click in the **Alert Value** text box and type in an accurate value. The alert will automatically be generated when the control point is run.
3. To create an alert for a target that repeatedly exceeds the thresholds, check the **Create an alert if there are more than "?" previous occurrences in history** check box. Use the arrows to specify the quantity of occurrences that should occur before an alert is generated.
4. **[OPTIONAL]** Click in **Alert Message** and type a message that will appear with the alert when sent via e-mail or received within Analytics.
5. Click the **Save** button.
6. Close the **Control Point Maintenance** window.

CONTROL GROUPS

Control Groups are Control queries that contain multiple control points. This allows users to evaluate multiple risk areas in one query.

Prior to creating a Control Group, thresholds need to be established for each of the Control Points that will be used in the Control Group. Thresholds cannot be established within the actual Control Group. When the Control Group runs, Analytics runs and ranks each of the Control Points within the group independently based on established thresholds. In addition, it will also rank each of the exceptions at a group level.

How To Create Control Groups

1. From the **Controls** tab, right click anywhere in the window.
2. Select **New Control Group** from the **New** submenu.

Control Group Maintenance

Control Group Name: Classification:

Control Target:

Assign Exceptions To:

Date Range:

Security Access: ☒ Public ☐ Run-Only ☐ Private Owner:

Run options: ☒ Immediately ☐ Offline

Drag from Available to Selected to add a point to the group. Drag from Selected to Available to remove.

Available Points	Selected Points	Weight	Allow Negative Scores
REBOOT SUMMARY CASHIER	CANCEL SUMMARY CASHIER		
Reboot Count	Cancel Count	8	<input type="checkbox"/>
RETURN SUMMARY CASHIER	CASH REFUND SUMMARY CASHIER		
Cash Exch MI Amount	Cash Refund Amount	3	<input type="checkbox"/>
Cash Exch MI Count	Cash Refund Count	6	<input type="checkbox"/>
Cash Exch MO Amount	Cash Refund Pct Sales	4	<input type="checkbox"/>
Cash Exch MO Count	RETURN SUMMARY CASHIER		
Exch Even Count	Cash Exch MO Count	6	<input type="checkbox"/>
Exch MI Amount			

Notes

Figure 4-9: Control Group - New

3. Click the **Control Group Name** text box and type a Control Group Name.
4. Click the **Control Target** down arrow and select a control target.
5. Click the **Assign Exceptions To** down arrow and select an appropriate user or select "User Running the Control".
6. Click the **Date Range** down arrow and select a default time frame.

7. Click the **Classifications** down arrow and select a classification to store the control group in on the Controls tab.
8. Click a radio button to identify the **Security Access** for this query.
 - Public:* All users can modify and run control group.
 - Run-Only:* All users can run; Query Owners and System Administrators are the only users that can modify the control group.
 - Private:* Query Owners and System Administrators are the only users that can view, run and modify the control group.
9. Click the **Query Owner** down arrow and select a user as the owner if different than the default.
10. Use the click and drag method to select **Available** control points and drag to the **Selected** control point section on the right.
11. Click the weight arrows to adjust the risk level between the various control groups that are weighted against each other in the group.
12. Click the **Save** button.

CHAPTER

5

Controls

OVERVIEW

Control queries are used to detect and report exceptions as compared to normal activity. They identify activity that exceeds specified criteria set for a selected period of time. Controls maintain a history of exceptions, which allow users to pinpoint trends and identify compliance issues.

Exception reports generated by Controls are saved on a Review screen, whether run Immediately or Offline, until manually removed. This allows users to access detected exceptions without having to run the same query multiple times.


LEARNING OBJECTIVES

Upon completion of this section, you should be able to:

- Run and Review Control queries
- Run Top Level reporting to display only a specific number of exceptions
- Run a Control Query Offline
- Review Exception History
- Use Resolution Notes and update Watch Status
- Add associates and stores to watch lists
- Link to Adhocs
- Manage the Review Screen

MANUALLY RUNNING CONTROL POINTS

Controls detect and report exceptions in accordance to normal business activity. They are based off of existing Adhocs referred to as Control Queries. For example, the Control Query, Line Void Summary Cashier displays a summary of excessive line void activity by cashier for counts, total amounts, percentage to transactions, percentage to items, and percentage to sales. A Control Point, such as Line Void Count, is built off of this Control Query, and is used to highlight Cashiers with an excessive number of Line Void transactions.

- Control Queries are recognized on the **Controls** tab as a report icon .

- Control Points are recognized under Controls Queries as a pencil tip icon .

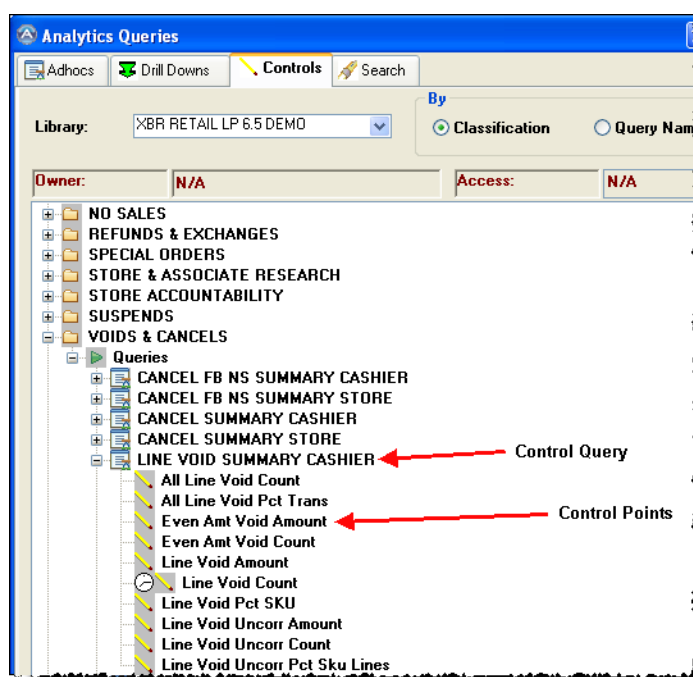


Figure 5-1: Control Query/Points

Although Control Points can be run manually, it is recommended that they be scheduled to run automatically and the user can review the results via the Review screen. See Scheduling Queries and Alerts in the *Fundamental Training Guide* for information on scheduling queries to run automatically.

Control Points build a history of activity each time they are run. If a user runs a Control Point for a given time period and establishes history, re-running the Control Point for the same time period and assigning it to the same Review screen will override the previous exceptions and any investigative work associated with the exceptions. Therefore it is important to ensure that multiple users running the same Control Points whose results display on a common Review screen do not override historical data. When an exception set is about to be replaced, the system will prompt the user to confirm or cancel the replacement.

Threshold Maintenance

Owners of a query or users with System Administrator or System Managers can maintain control points and modify control point threshold criteria as needed. Users can set custom threshold values for different segments of a company. For example, higher activity stores may have a greater cash refund threshold than the lower activity stores.

Assigning Exceptions

When Control Points are run, the exceptions are assigned to a user's Review screen. Every user has his/her own Review screen. It is recommended that users store exceptions on a common review screen, such as the System Administrator's, if multiple users are reviewing overlapping regions. When control point exceptions are accessed from one common review screen, it alleviates the potential of duplicating efforts in investigating and tracking progress on suspicious cases. The common review screen allows users to easily share notes on their investigative progress. This common review screen is selected by using the **Assign Exceptions To** text box when running a control point. Otherwise, users may review exceptions on their own Review screen if they are solely responsible for a given region or group of stores.

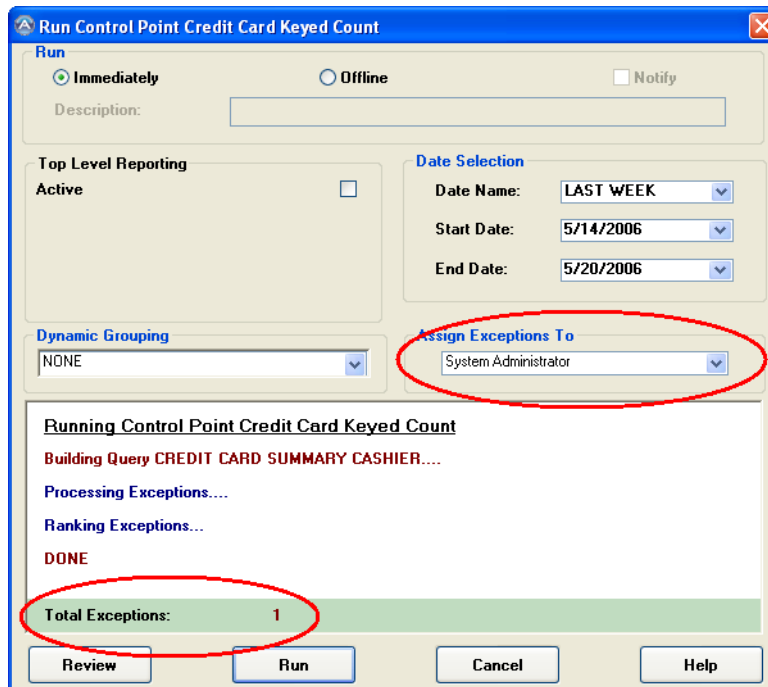



Figure 5-2: Assigning Exceptions

PROCEDURES

How to Manually Run A Control

1. Click the **Queries**  button.
2. Select the **Controls** tab and expand a *Classification*. Expand Queries to list the Control query and the control points associated with that Control query.
3. Double click a **Control Point**.
4. Select **Immediately** or **Offline**. Immediately will run the exceptions and display them on the assigned review screen right away. Offline will run the exceptions in the background, which allows users to continue reviewing exceptions. If you select Offline the exceptions will display on the review screen which was assigned (step 8) once the control has been run. This will depend on the process time that was set up during installation i.e. every 10 minutes.
5. **[OPTIONAL]** If you want to display the top-level records, activate the **Top Level Reporting** check box. The Top Level Field is set to Rank Score/Overall score to determine the top rows. Type the number of rows to be returned in the **Top Level rows** box.

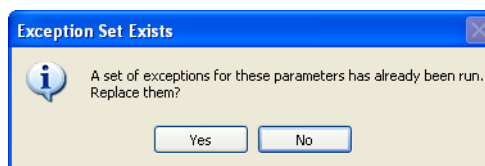


If you choose Top Level Reporting, the query will find all the exceptions but will only display the number you requested (in the Top Level Rows) on the Exception list window.

6. In the **Date Name** area, select the time frame for which the query will run.
7. **[OPTIONAL]** **Specify Criteria** if you would like to narrow down the results. You can specify a specific region, store, district etc, depending on what was set up in the Control query by the owner. Click the down arrow to see a list of options or type in your option in the text box.
8. In the **Assign Exceptions To** area, select the Review screen where the exceptions should display.
9. Click the **Run** button. You will see the control query run and count the number of exceptions found if you choose Immediately. If however you choose Offline you may move on to research other exceptions.



*When a Control is rerun for a date range that was already reported and assigned to the same Review screen, an Exception Set Already Exists message displays. If anyone has already begun working on this exception, click **No** to avoid overwriting his or her work.*



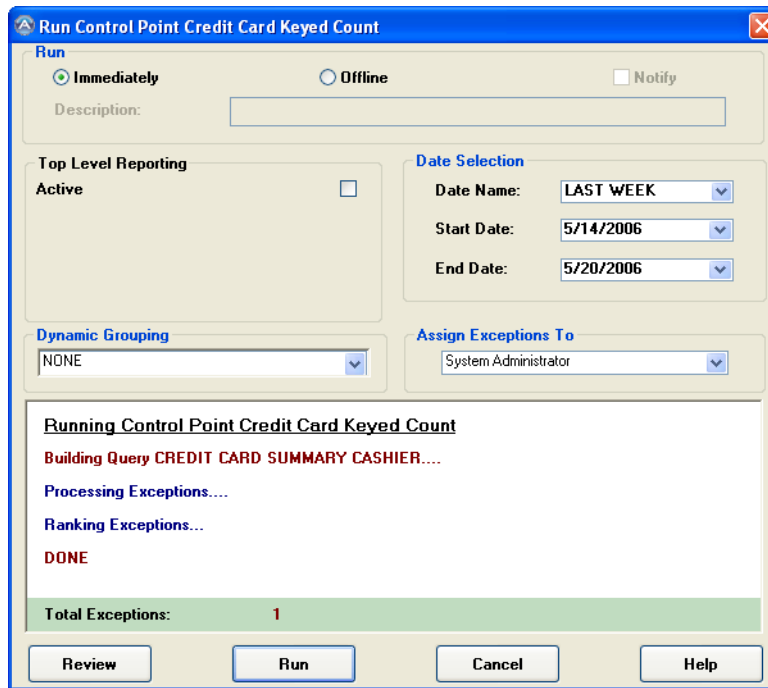



Figure 5-3: Run A Control Point

How to Open the Review Screen

1. Click the **Review**  button. The Review Screen will appear with a **List of Exception sets** for all of the Control Points that have run.

Control Name	Period	Number of Exceptions	Percent Resolved	Run Date	Time	Run By
Cashier						
CONTROL GROUPS	Library: XBR RETAIL LP 6.5 DEMO					
My High Risk Group - WPL	5/1/2006 to 5/7/2006	380	0%	7/8/2009	15:12	Train 6
	5/8/2006 to 5/14/2006	375	0%	7/8/2009	15:14	Train 6
	5/15/2006 to 5/21/2006	385	0%	7/8/2009	15:16	Train 6
	5/22/2006 to 5/28/2006	382	0%	7/8/2009	15:19	Train 6
CREDIT CARD SUMMARY CASHIER	Library: XBR RETAIL LP 6.5 DEMO					
Credit Card Keyed Count	5/14/2006 to 5/20/2006	1	0%	8/20/2009	10:47	Train 6
MY REFUND EXCEPTIONS - WPL	Library: XBR RETAIL LP 6.5 DEMO					
Total Refund Amount	5/14/2006 to 5/20/2006	31	0%	7/9/2009	14:30	Train 6
NO SALES SUMMARY CASHIER	Library: XBR RETAIL LP 6.5 DEMO					
No Sale Count	5/22/2006 to 5/28/2006	79	0%	7/8/2009	14:49	Train 6

Figure 5-4: Exception Review Screen

2. Select the review screen (for example, System Administrator) used to organize Controls. In this step you are either selecting the ID of the user to whom the Exceptions were assigned if you are using a common Review screen, or your own User ID.
3. The buttons near the top of the window are discussed on page 10-13.

UNDERSTANDING THE REVIEW SCREEN

When **Controls** are run they are assigned to a review screen. Depending on the size and structure of your organization, it is recommended that a common review screen be used to store all exceptions. This ensures that each user can look in one area to review ALL exceptions and avoids a duplication of efforts. If there is no risk of duplicating efforts, then users can use their own review screen.

To review the exceptions that were detected, users can click the **Review** button. In the List of Exception Sets window, users will see:

- The name of the Control Query and Control Point queries that were run.
- The time period during which the exceptions occurred.
- The number of exceptions found for the specified time period. The number in the parenthesis () is the number the user specified in the Top Level Reporting section and only these exceptions will display on the following screen.
- The percent resolved which tracks investigative progress for a specific set of exceptions.
- The date and time that the Control Point ran.
- The user that ran the Control Point.

REVIEWING EXCEPTIONS

The actual exception activity that occurred during a specified time frame can be viewed by:

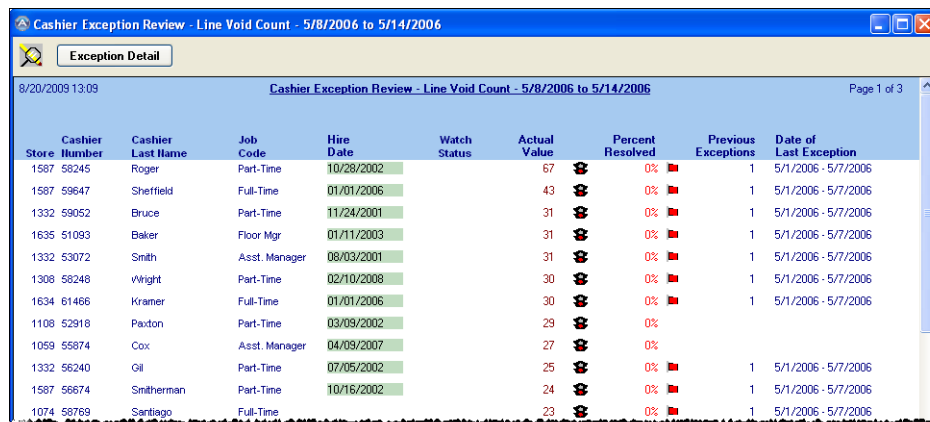
- Double clicking the control point or time frame of interest in the Review screen or
- Selecting the control point or time frame of interest from the Review screen and clicking the **Review Set** button.

The following information is available in the **Exception Review** screen:

- **Actual Value** displays the actual value of store or associate activity according to the criteria for the control that is run. For example an actual count or amount that exceeds the threshold for the control point. This window is sorted by the highest value, which indicates the worst offender. For a Control Group the actual value displays in each Control column. Next to the actual value in parenthesis is the individual rank for that specific control.
- **Rank Score** - Only displays if indicated on the Control Target. The rank score is a calculation of the difference between the criteria value that was set and the actual activity that occurred.

Chapter 5: Controls



- **Percent Resolved** - Allows users to track the progress of their investigations. There are 3 status levels to choose from:
 - Open (0%)
 - In Progress (50%)
 - Closed (100%)
- **Previous Exceptions** - Displays the number of occurrences from history that this employee or store has been an exception for this control point. The date of the last exception occurrence is noted next to the number of previous exceptions.



The screenshot shows a window titled "Cashier Exception Review - Line Void Count - 5/8/2006 to 5/14/2006". It contains a table with the following columns: Store Number, Cashier Last Name, Job Code, Hire Date, Watch Status, Actual Value, Percent Resolved, Previous Exceptions, and Date of Last Exception. The table lists 15 cashiers with their respective details.

Store Number	Cashier Last Name	Job Code	Hire Date	Watch Status	Actual Value	Percent Resolved	Previous Exceptions	Date of Last Exception
1587 58245	Roger	Part-Time	10/28/2002		67	0%	1	5/1/2006 - 5/7/2006
1587 59647	Sheffield	Full-Time	01/01/2006		43	0%	1	5/1/2006 - 5/7/2006
1332 59052	Bruce	Part-Time	11/24/2001		31	0%	1	5/1/2006 - 5/7/2006
1635 51093	Baker	Floor Mgr	01/11/2003		31	0%	1	5/1/2006 - 5/7/2006
1332 53072	Smith	Asst. Manager	08/03/2001		31	0%	1	5/1/2006 - 5/7/2006
1308 58248	Wright	Part-Time	02/10/2008		30	0%	1	5/1/2006 - 5/7/2006
1634 61466	Kramer	Full-Time	01/01/2006		30	0%	1	5/1/2006 - 5/7/2006
1108 52918	Paxton	Part-Time	03/09/2002		29	0%		
1059 55874	Cox	Asst. Manager	04/09/2007		27	0%		
1332 56240	Gil	Part-Time	07/05/2002		25	0%	1	5/1/2006 - 5/7/2006
1587 56674	Smitherman	Part-Time	10/16/2002		24	0%	1	5/1/2006 - 5/7/2006
1074 58769	Santiago	Full-Time			23	0%	1	5/1/2006 - 5/7/2006

Figure 5-5: Previous Exceptions

- A traffic light  appears when an Alert threshold has been exceeded or when there are excessive repeat occurrences.
- A red flag  appears if there have been previous exceptions in history.

Buttons on Exception Review Screen

This Button...	Does This...
Exception Detail	Displays more information about the selected exception record(s). You could also double-click the record to display the exception details.
Store Detail	Displays information from your Store Master file, allowing you to see a store manager's name or the store's telephone number.
Associate Detail	Displays information from your Associate Master file allowing you to review information such as an associate's job code or date of hire.

How To Review Exceptions




1. Click the **Review** button. The **List of Exception Sets** screen appears with a list of all the Control Points and the numbers of exceptions found for each point are listed.
2. Select the user's Review screen that the exceptions are stored in.
3. Double click an **Exception Set** to review the exceptions.
4. From the Exception Review screen you can:
 - Select a row and click the **Exception Detail** button to review specific details about the exception being investigated.
 - **[OPTIONAL]** Select a row and click the **Store Detail** button (if available) to view specific store information from the Store Master such as Store Manager name and Store phone number. Close this window to return to the Exception Review screen.
 - **[OPTIONAL]** Select a row and click the **Associate Detail** button (if available) to view specific information about the employee from the Employee Master such as hire date and job code. Close this window to return to the Exception Review screen.

EXCEPTION DETAILS

The **Exception Details** screen displays the details of the actual exception activity: the actual value versus the threshold value that the control point was measured on, the percent difference between the actual activity and the threshold value, and the rank of the exception compared to the other exceptions in the list. Users can also adjust the status of resolving the exception and view a graphed depiction of the exception history. To view the exception details for any listed exception, select the exception and click the **Exception Details** button.

The following is a list of features that can be viewed in this window:

- The **Control Name**, **Target**, and **Date Range** are at the top of the query - This shows you the control that was run along with the Store and/or cashier you selected from the Exception Review screen.
- **Control Point and Measure** - Indicates which was used to find the exceptions.
- **Start and End Dates** - The dates the exception occurred between. If there are multiple dates listed than there have been previous exceptions for this store or cashier.
- **Weight** - Single control points are assigned a weight of one, which is used in the Rank Score calculation.
- **Actual Value** - The actual activity that occurred during the time frame that the control point ran.
- **Threshold Value** - The customized criteria above which to detect exceptions.
- **Rank** - The placement of this exception compared to all of the other exceptions with 1 being the worst offender.
- **Status** - Can be changed to the following options: Open, In Progress or Closed.
- **Resolution Note** icon  - Displays if a Resolution note has been created for this exception.



Read Only users have the ability to add/edit these notes if given permission by the System Administrator within their user profile.

- **Previous Exceptions** icon - A red flag  appears if there have been previous exceptions in history.



- **Alert** icon - A traffic light  appears when an Alert threshold has been exceeded or when there are excessive repeat occurrences.




Figure 5-6: Exception Detail

Exception History Graph

How To View the Exception History Graph

1. From the **Exception Detail** window, click the **Graph** button  to view the default graph.



To return to the data again, click the **Report** button .

2. In the **Value** area, you can change the Value options to view the exception values for both actual and threshold to compare differences. For control groups, you can select multiple **Measures** to display in the graph.

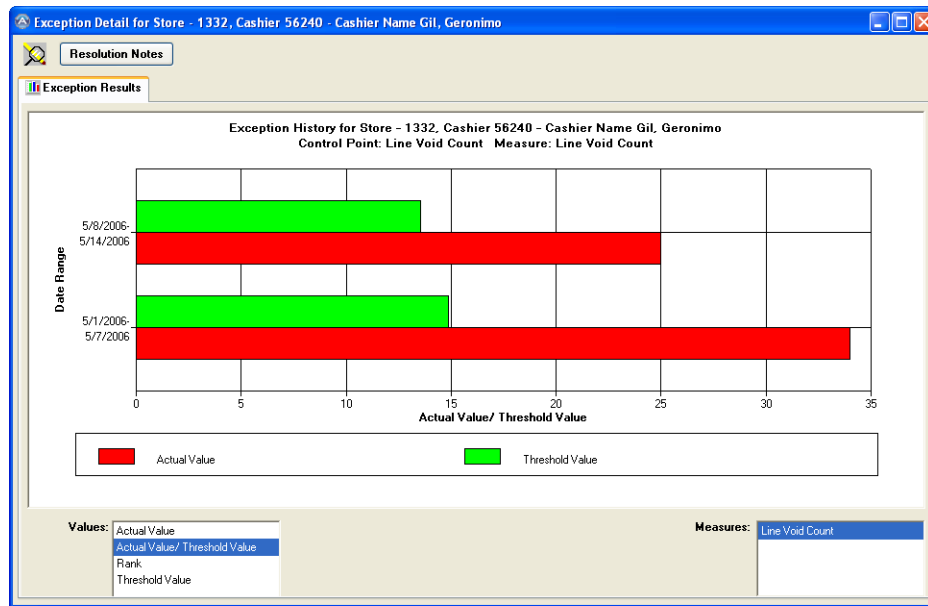




Figure 5-7: Exception History Graph

Linking to Adhoc Queries

How To Link to Adhocs

1. From the **Exception Detail** window, verify the exception is selected. You can use the **[Ctrl]** or **[Shift]** keys to select more than one row to link on multiple weeks of history.
2. Click the **Link**  button. If there is more than one query available to link to, the **Select a Query to Link to** dialog box will display.
3. Double click a query from the list to run and display the results.
4. Upon reviewing one or more Adhocs, click the **Exception**  button on the Window toolbar or use the Window menu option to locate the **Exception Detail** window to return to the **Exception Detail** window to update the *Status* or post a *Resolution Note*.


TIP

Click the *Exception* button to quickly return to the *Exceptions* window.

Changing the Exception Status

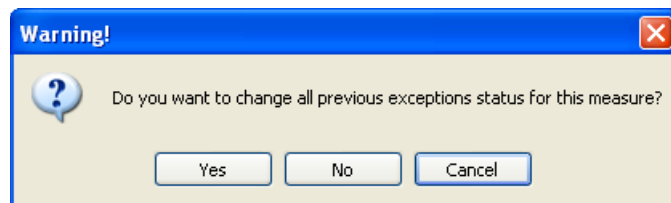
How To Change the Exception Status

1. From the **Exception Detail** window, click the down arrow on the **Status** list box.



To see the Percent Resolved update on the List of Exception Sets screen, the List of Exception Sets screen needs to be closed and reopened.

2. Select **Open** (0% resolved), **In Progress** (50% resolved) or **Closed** (100% resolved). If you select the most current date range, you will be asked if you want to update all previous exceptions to the same status.



3. Click **Yes** to change all the previous status fields.
Click **No** to only change the selected status field.


Resolution Notes

How To Write Resolution Notes

1. From the Exception Detail window, click the **Resolution Notes** button.



Notes are saved with time stamps that note the author, date and time the note was written. Each note is also given a number for identification purposes.

2. Click the **Add a New Note** button and type a note.
3. Click the **Apply** button.
4. A Resolution note icon  is displayed in the **Exception Detail** window when a note has been written.
5. To **Update** or **Delete** a note:
 - a. Select the number of the Note from the drop down list.
 - b. Click **Update Note** or **Delete Note**. The text of the note appears in the lower text box.
 - c. If you are updating the note, make any desired changes and click **Apply Update**.
If you are deleting the note, click **Apply Delete**.



Only System Administrators can delete Resolution Notes; however, all security levels can edit Resolution Notes.

CLEANING UP THE REVIEW SCREEN

Exception sets remain in the Review window until they are manually removed. It is recommended that when exceptions have been completely investigated, users move them to a closed sets folder or commit them to history.

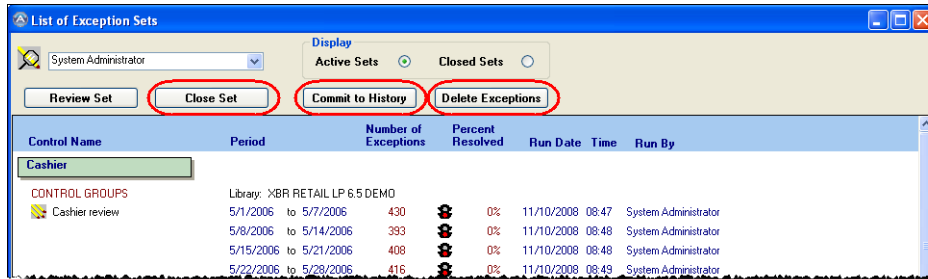




Figure 5-8: Review Screen

Button	Description
Close Set	Moves an Exception Set to the Closed Sets window. Select the set you would like to move and click the Close Set button. To work with this exception set again, click the Closed Sets radio button. All closed exception sets will be listed.
Commit to History	Removes the selected Exception Set from the Review screen but retains the history of occurrences. Use this button when it is no longer necessary to edit Resolution Notes or link to Adhocs to investigate more detail about stores or associates in an exception set. The next time a store or associate from this Exception Set is reported in the same risk category, they will be flagged for previous activity in history.
Delete Exceptions	Permanently removes the Exception Set from the Review screen. The store and associate exception information will no longer be available for history.

DEFINING THE THRESHOLD VALUE

System Administrators, System Managers and Query Owners are the only users that can adjust threshold criteria.

How to Define a Threshold Value

1. Click the **Queries**  button.
2. On the **Controls** tab expand a Classification and then expand Queries to list the Control query and the control points associated with that Control query.
3. Select a **Control Point**.
4. Click the **Open**  button. The **Control Point Maintenance** dialog box displays with 3 tabs:
 - The **Criteria Level** section is used to create custom criteria levels. Businesses that prefer to set thresholds based on business volume, can utilize this area to specify those levels and then indicate the preferred thresholds for each of the specified levels as well. For example, a high volume store might have a Cash Refund and Exchange Total threshold by cashier of -\$150.00 but a low volume store could be set at a threshold of -\$75.00.
 - The **Default Criteria** area is where users select the fields that will be used as measures and then indicate thresholds and alert values accordingly.
 - The **Alert** area allows users to create additional alerts based on a history of exception occurrences as well as attaching policy notes and alert messages.

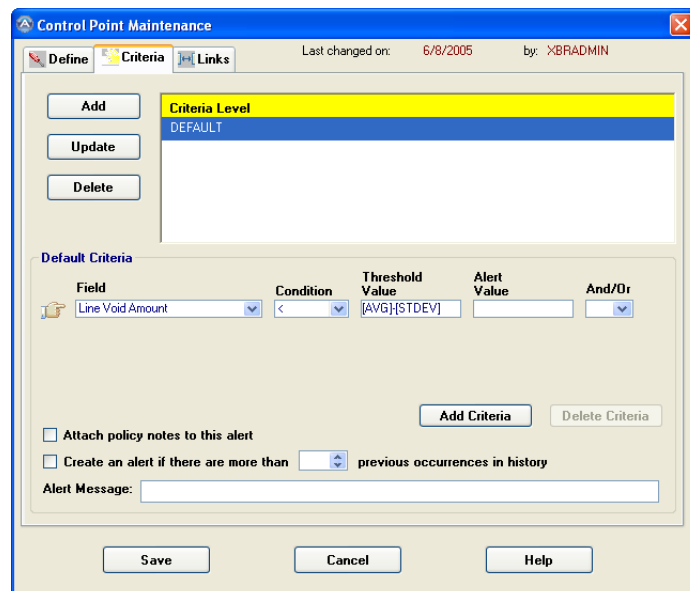


Figure 5-9: Control Point Maintenance Dialog Box

5. In the **Control Point Maintenance** dialog box, click the **Criteria** tab.

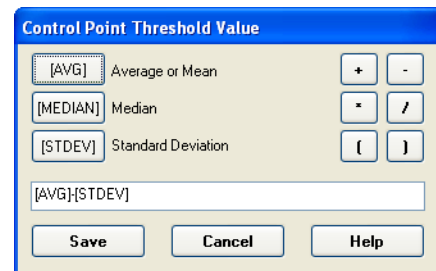


In the Criteria Level area, "Default" refers to a standard for the entire organization. Thresholds can be customized for different areas of the organization by using the **Add**, **Update**, and **Delete** buttons in the **Criteria Level** section at the top.

6. Select the field that will act as a measure for the control point from the **Field** drop-down list.
7. Select an operator that best matches the mathematical expression to detect exceptions from the **Condition** drop-down list.
8. Click in the **Threshold Value** text box and type a value or double click in the **Threshold Value** text box and use the **Control Point Threshold Value** window to create an automated calculation.
9. Click the **Save** button.
10. Close the **Control Point Maintenance** dialog box.

How To Create Calculated Thresholds

1. In the **Control Point Maintenance** dialog box, click the **Criteria** tab.
2. Double-click in the **Threshold Value** text box. The **Control Point Threshold Value** dialog box is displayed and can be used to create an automated calculation.
3. Click the **AVG**, **MEDIAN**, or **STDEV** buttons and operator buttons to create the necessary mathematical expression.
4. Click the **Save** button for the **Control Point Threshold Value** dialog box.
5. Click the **Save** button for the **Control Point Maintenance** dialog box.
6. Close the **Control Point Maintenance** dialog box.



How To Create Custom Thresholds

Custom thresholds can be created for varying segments of the organization. For example, thresholds can be set differently for higher volume stores versus lower volume stores.

1. In the **Control Point Maintenance** dialog box, click the **Criteria** tab.
2. Click the **Add** button from the **Criteria Level** section at the top.
3. In the **Filter** window, double click the Field (Column) name so that it appears in the filter box above.

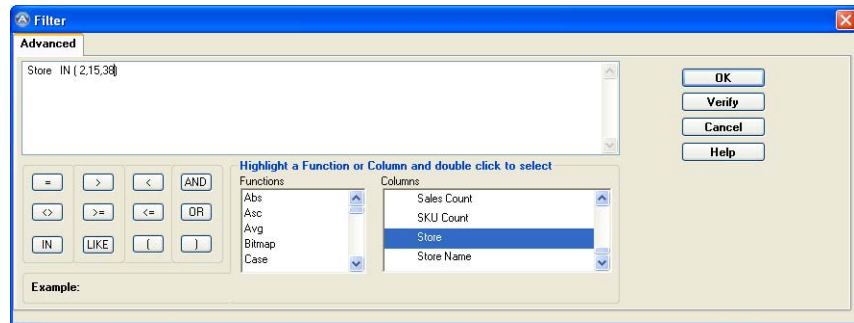


Figure 5-10: Custom Threshold Value Filter

4. Click or type the appropriate operator (<, >, =, in, etc.)
5. Complete the filter by typing in the necessary value(s).
6. Click **OK**.
7. Select the Filter name that was just created in the **Criteria Level** section.
8. Click in the **Threshold Criteria** box and type in a more realistic value for this specifically defined filter or group (Figure 5-11).

The screenshot shows the 'Control Point Maintenance' window with the 'Criteria' tab selected. The 'Criteria Level' section displays 'Store IN (2,15,38)' and 'DEFAULT'. The 'Criteria for Store IN (2)' section at the bottom shows a table with columns: Field, Condition, Threshold Value, Alert Value, and And/Or. The 'Field' is 'Line Void Amount', the 'Condition' is '<', and the 'Threshold Value' is '250', which is circled in red.

Field	Condition	Threshold Value	Alert Value	And/Or
Line Void Amount	<	250		

The screenshot shows the 'Control Point Maintenance' window with the 'Criteria' tab selected. The 'Criteria Level' section displays 'Store IN (2,15,38)' and 'DEFAULT'. The 'Default Criteria' section at the bottom shows a table with columns: Field, Condition, Threshold Value, Alert Value, and And/Or. The 'Field' is 'Line Void Amount', the 'Condition' is '<', and the 'Threshold Value' is '-100', which is circled in red.

Field	Condition	Threshold Value	Alert Value	And/Or
Line Void Amount	<	-100		

Figure 5-11: Different Threshold values

CREATE AN ALERT FOR A CONTROL

How To Create Alerts

1. In the **Control Point Maintenance** window, click the **Criteria** tab.
2. For an alert value, click in the **Alert Value** text box and type in an accurate value. The alert will automatically be generated when the control point is run.



If you are not already in the **Control Point Maintenance** window, then the Control Point needs to be opened first prior to creating alerts.

The screenshot shows the 'Control Point Maintenance' window with the 'Criteria' tab selected. The window title bar indicates it was last changed on 6/8/2005 by XBRADMIN. The 'Criteria Level' section shows 'Store IN (2,15,38)' and 'DEFAULT'. The 'Default Criteria' section has a table with columns: Field, Condition, Threshold Value, Alert Value, and And/Or. The 'Alert Value' field is circled in red and contains '-250'. Below the table, there is a checkbox for 'Attach policy notes to this alert' and a checkbox for 'Create an alert if there are more than 3 previous occurrences in history', which is checked. The 'Alert Message' field contains 'Investigate high refunds'. The 'Add Criteria' and 'Delete Criteria' buttons are visible. At the bottom are 'Save', 'Cancel', and 'Help' buttons.

Field	Condition	Threshold Value	Alert Value	And/Or
CC Ref Exch MO Amount	<	-100	-250	

☐ Attach policy notes to this alert

☒ Create an alert if there are more than 3 previous occurrences in history

Alert Message: Investigate high refunds

3. Check the **Create an alert if there are more than "?" previous occurrences in history** check box to create an alert for a target that repeatedly exceeds the thresholds. Use the arrows to specify the quantity of occurrences that should occur before an alert is generated.
4. **[OPTIONAL]** Click in the **Alert Message** text box and type a message that will appear with the alert.
5. Click **Save**.
6. Close the **Control Point Maintenance** window.

ALLOWING ANALYTICS TO DETERMINE A CONTROL POINT THRESHOLD

In the control point setup on the criteria tab you can let Analytics calculate an appropriate threshold. Instead of designating a specific threshold amount or quantity (such as Post Void Total >\$2,000) you can use such functions as:

Post Void Total > Chain Average

or

Post Void Total > Chain Average plus standard deviation

Average/Mean: The mean is the average for a set of numbers. The mean is calculated by adding together all of the numbers in a group or set of numbers and dividing by the count of numbers in that group.

Example: To find the mean of the following set of numbers: 2, 9, 3, 16, 5:

1. Add them together: $2+9+3+16+5 = 35$
2. Divide by the count of the numbers in the group (5): $35/5 = 7$
3. The mean in this example is therefore 7

Median: The median is the number that falls exactly in the middle of a group of numbers. To find the median, first arrange the set of numbers from lowest to highest. Next count off the numbers in pairs of lowest and highest until the middle number is reached.

Example: Using the same set of numbers as above (2, 9, 3, 16, 5):

1. Rearrange them from lowest to highest: 2, 3, 5, 9, 16
2. Count them off in pairs: (2, 16), (3, 9)
3. The only remaining number, 5, is the middle number and therefore the median

Standard Deviation: The **Standard Deviation** measures the disbursement of a group of numbers (in other words, how spread out a set of values is). It is generally represented by a **Bell Curve** and is calculated by taking the square root of the variance. The variance how far away each value is from the average of all the values and is calculated by finding the average of the sum of the square of the difference between the raw number and the mean (average).

Example: Using the following set of numbers: 2, 9, 3, 16, 5

1. Find the average (mean) of all the values: $(2+9+3+16+5)/5 = 7$

2. Find the deviation by subtracting the average from each value:

$$2 - 7 = -5$$

$$9 - 7 = 2$$

$$3 - 7 = -4$$

$$16 - 7 = 9$$

$$5 - 7 = -2$$

3. Square the deviation for each value:

$$(-5)^2 = 25$$

$$(2)^2 = 4$$

$$(-4)^2 = 16$$

$$(9)^2 = 81$$

$$(-2)^2 = 4$$

4. Find the variance by calculating the average of the squared deviations:

$$\frac{25 + 4 + 16 + 81 + 4}{5} = \frac{130}{5} = 26$$

5. Find the square root of the variance: the square root of 26.0 = 5.1

In this example the standard deviation is 5.1. What this means is that most of the data (68%) falls within ± 5.1 points of the mean (or one standard deviation). In other words, if the mean is 7, most of the data falls between 1.9 ($7-5.1$) and 12.1 ($7+5.1$). Since 2, 3, 5, and 9 all fall within this range, 4 out of the 5 numbers (or 80% of the numbers) are within ± 1 standard deviation of the mean.

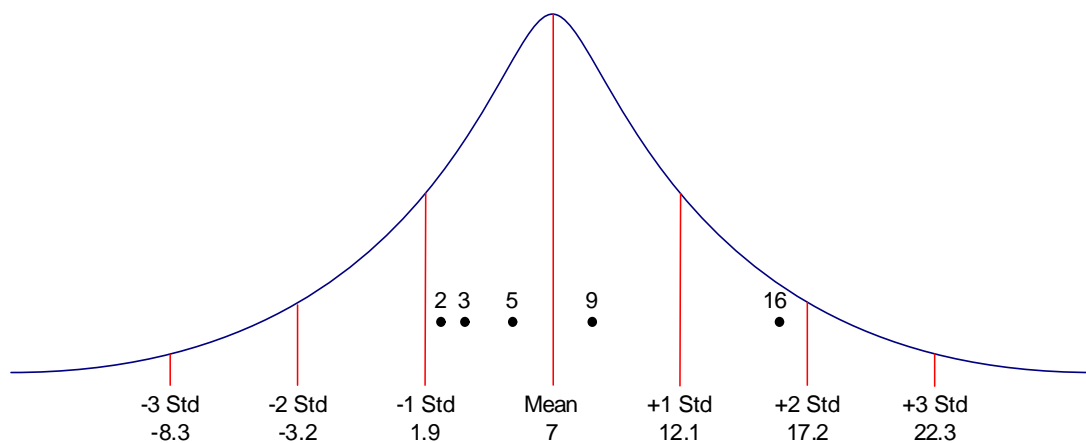


Figure 5-12: Standard Deviation

USING STORE AND EMPLOYEE WATCH LISTS



If you have upgraded from version 4.x or prior, this functionality may not be available. Contact your Micros-Retail Representative for more information.

The Watch status functionality is used to make users aware of Stores and/or Employees that need to be monitored due to questionable activity. A status such as warning, watch or investigate can be assigned by simply right-clicking in any query results that contain a Store and/or Employee number. Once Stores or Employees have been assigned a Watch Status, you can easily review them by running a watch list Adhoc - **Watch List Associates** or **Watch List Stores**. The Watch Status field exists in the Store and Employee Master Files and can be brought in to a query to enhance analysis.



Please refer to the *Intermediate Training Guide* for adding fields to queries.

For example, a cashier can be placed on watch for having excessive credit card refund activity. If the watch status field exists in a Post Void query and the cashier shows up in the report, a user will be able to see the watch status flag. By reading the watch status notes, a user can determine why the cashier was placed on watch. The status stays with the cashier number regardless of the activity that caused it.

There are two methods for assigning a **Watch Status**:

- Right-click to use a shortcut method to assign or update a Store or Employee Watch Status and date. Also, add comments explaining why an associate was placed on watch. These steps are explained below.
- Use **Table Editor** to assign or update a Store or Employee Watch Status and date. Also, add comments explaining why an associate was placed on watch.



Please refer to the *Intermediate Training Guide* for information about using Table Editor.



Read only users can edit Store and Associate Watch status.

How to Add Stores or Employees to a Watch List

1. Run a Control query.
2. Select the Store(s) or Employee(s) to place on watch.

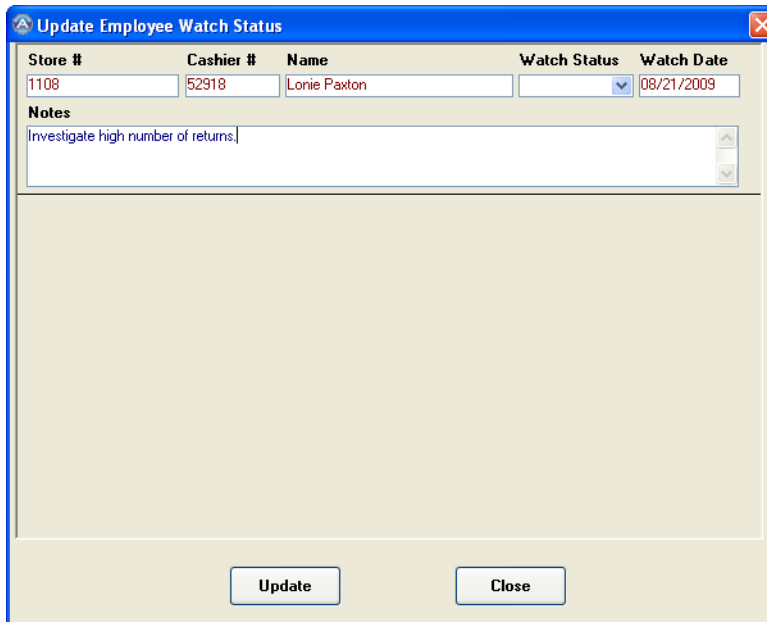


For Adhoc queries, use the **[Ctrl]** key to select non-adjacent multiple rows or the **[Shift]** key to select consecutive rows.

3. Right-click anywhere in the report.
4. Select **Update Employee Watch Status** or **Update Store Watch Status**. When you right-click in a query that has both Store and Employee number fields, both Store and Employee watch list options are available. When reporting at the Store level, only the Store watch list option is available.
5. Select the appropriate **Watch Status** from the drop down list.



TIP Select **No Status** to remove a Store or Employee from the Watch list.



Store #	Cashier #	Name	Watch Status	Watch Date
1108	52918	Lonie Paxton		08/21/2009

Notes

Investigate high number of returns.

Update Close

Figure 5-13: Update Employee Watch List

6. Today's date appears as the **Watch Date** but you can type a new date if you would like.
7. Type notes in the **Notes** text box.
8. Click the **Update** button.

How to Run a Watch List Query



You can run a Watch List Adhoc query to review which Stores and Employees have been placed on watch status.

1. From the Adhocs queries list, locate the **Store & Associate Research** classification (see right).
2. Select either the **Watch List Associates** or **Watch List Stores** query.
3. Click the **Run** button. Note the date range will default to None.
4. Review the results. You can right click to update the Store or Employee Watch Status.



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