

ACR/Summary[®]

Variable Cycle Processing Guide

For z/OS[®], Windows[®] and UNIX[®]



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Publication Date 7/24/09

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Introduction

When you set up your ACR/Summary jobs, they often reflect routine, scheduled processing: daily jobs, weekly jobs, monthly jobs, etc. These jobs require historical values from prior jobs to use in balancing rules. In the real world, however, jobs do not always reliably run daily, weekly or monthly. We have holidays, system failures, and schedule changes.

What do you do when the schedule is unpredictable? What if a daily job did not run yesterday but you still need a history item for balancing?

For these situations, ACR/Summary provides variable cycle processing.

This guide introduces you to variable cycle processing and provides a tutorial with step-by-step instructions. Before starting with variable cycle processing, however, this guide reviews cycle IDs and relative cycle processing. Reviewing these concepts will help you understand the remainder of this guide.

Review of Cycle IDs

Before learning about relative or variable cycle processing, let's review what cycle IDs are about.

A cycle ID is a way to uniquely identify each run of a job. It consists of an 8-digit cycle number and a 3-digit run number.

`(Cycle number + run number) = Cycle ID`

Cycle IDs are especially important for identifying and retrieving values from history records (containing results of previous job runs) in the history database.

Often the best choice for a cycle number is the system date associated with the job run in Gregorian or Julian date format or a date extracted directly from the input source. However, cycle numbers do not have to be dates.

The examples in this guide use dates because they are easy to understand.

Cycle IDs can be assigned various ways. In the examples in this guide, you will assign them as an online option.

What Is Relative Cycle Processing?

Relative cycle processing allows your ACR/Summary job to retrieve history items based on a comparison of the current cycle to previous cycles.

The current cycle is always classified as +000, the previous cycle is -001, the one previous to that is -002, and so forth. You can retrieve up to the -998 cycle.

So, to retrieve a history item from a run four cycles in the past, you would choose a relative cycle of -004. For a job running on Friday, the relative cycle for Thursday would be -001 and for Wednesday it would be -002, as shown below.

	<u>Relative Cycle</u>
Daily Job - Monday	-004
Daily Job - Tuesday	-003
Daily Job - Wednesday	-002
Daily Job - Thursday	-001
Daily Job - Friday	+000 (current)

Relative Cycle Processing

The **cycle accumulation option** allows you to automatically total all history items retrieved.

If you specify cycle accumulation, then the relative cycle number refers to the oldest cycle retrieved. If you do not specify cycle accumulation, then only oldest cycle is retrieved.

Daily Job - Monday	-004	} With a relative cycle processing option of -004 and cycle accumulation selected, these five values are added together to use in the rule
Daily Job - Tuesday	-003	
Daily Job - Wednesday	-002	
Daily Job - Thursday	-001	
Daily Job - Friday	+000	

Relative Cycle Processing with Cycle Accumulation

Of course, there may be processing situations where the current cycle (+000) is not available and yet you've specified it in your job.

For this situation, you can choose to do one of the following:

What Is Relative Cycle Processing?

- Use the most recent cycle record as the +000 relative cycle.
Subsequent relative cycles are then based from this history.

This option is specified by entering Y in the **Should most recent cycle be retrieved when cycle does not match current cycle?** field.

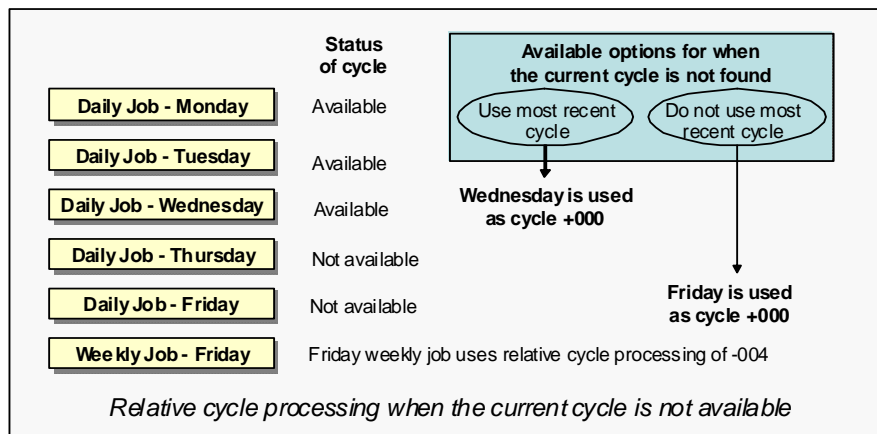
- Do not adjust the cycle numbers.

This option is specified by entering N in the **Should most recent cycle be retrieved when cycle does not match current cycle?** field.

On z/OS, these options are available in the ACR/Summary History Items panel.

On Windows and UNIX via the graphical interface (ACR/Summary Client or ACR/Workbench for Summary), these options are available on the History Item dialog via the **Retrieve most recent cycle** and **If item is not found** fields.

The following example shows how this option works in a situation where some jobs are unavailable. In this case, the Thursday and Friday jobs are not available.



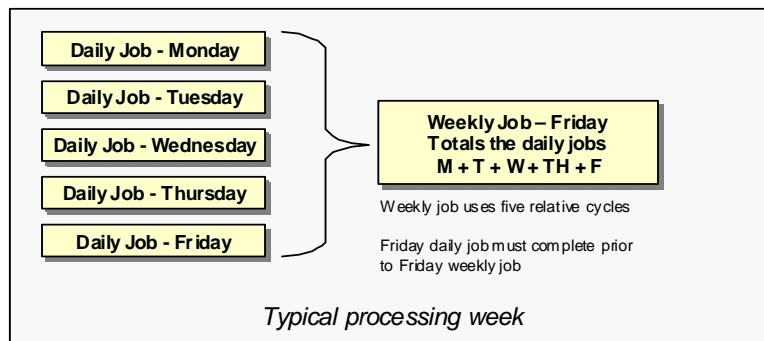
Notice the situation for the **Do not use most recent cycle option**. The Friday values are not available, but the ACR/Summary job must still use it. In this situation, the ACR/Summary job will use zeroes as the values for that cycle.

What Is Variable Cycle Processing?

Variable cycle processing allows you to control the retrieval of a history item based on the run date and time or the cycle ID of another job or both. This is unlike relative cycle processing, which relies exclusively upon cycle IDs.

The purpose of variable cycle processing is to accommodate situations where the run date and time of other jobs that provide the history items are different than usual.

For example, you might have a weekly job that performs balancing that uses the history items from daily jobs:



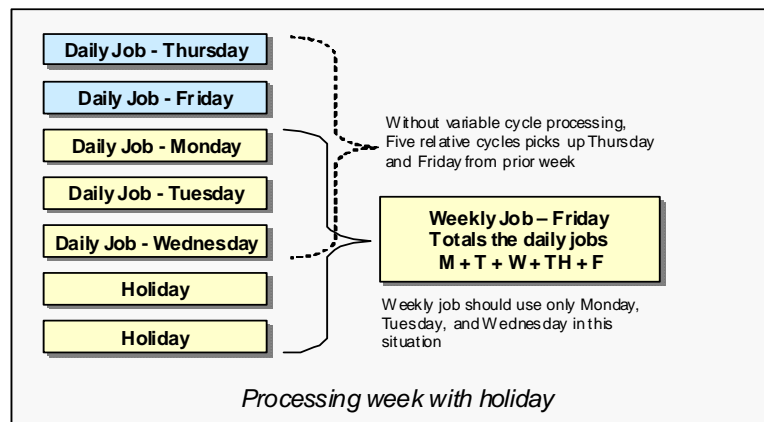
In this situation, the cycle processing indicates five relative cycles to use for the weekly job.

However, the daily job might not run every day. For example, during Thanksgiving week in the U.S., the daily processing for Thursday and Friday might not take place.

If your ACR/Summary controls are for the financial industry, any holiday might mean a cycle with no processing, and therefore no historical data to use in a subsequent balancing job.

In our example, if the “five relative cycles” were used for input to the weekly job, the job would use input data from Thursday and Friday of the prior week.

Specifying the Relative Cycle and Variable Cycle



By using variable cycle processing, you could specify that only the daily job cycles that have run since the last time the weekly job ran will be picked up by the weekly job and used in balancing.

Variable cycle processing relies upon the cycle IDs or run dates of retrieved history items. By making comparisons, ACR/Summary can correctly choose to use or not use the history item.

ACR/Summary offers selections that match your processing environment. These options are available in the **Variable Cycle** panel, as shown below. Each option is discussed in detail in “Choosing a Variable Cycle Processing Option” on page 9.

Specifying the Relative Cycle and Variable Cycle

On z/OS, the retrieved history item that you will use in your comparisons is specified in the **Relative cycle** field in the History Items panel (this corresponds to the History Item dialog box on Windows and UNIX).

On z/OS, the variable cycle ID that will be used for the Variable Cycle job is specified in the **Relative cycle** field in the Variable Cycle panel (this corresponds to the Variable Cycle dialog box on Windows and UNIX).

The following graphic shows:

- The History Items panel for the weekly sales job. This history item accumulates the daily totals at week end.

1 ■ Introduction

Specifying the Relative Cycle and Variable Cycle

- The Variable Cycle panel for the weekly sales job. On z/OS, to access this panel, choose **Set advanced features > Variable cycle** from the History Items panel. On Windows and UNIX, to access the Variable Cycle dialog box, click on **Variable Cycle** in the History Item dialog box.

Daily Sales Data

Cycle	Run date	Run time	Relative cycle
20060304	060304	10:05	-002
20060305	060305	10:15	-001
20060306	060306	10:02	-000

History Items

Item number	Description
001	DAILY SALES TOTAL

History job ID:
 Job name: SALES Internal item number: 001 (1-100)
 Step name: DAILY
 Qualifier: Relative cycle: -002 (-998 to +000)

Should most recent cycle be retrieved when cycle does not match current cycle? = (Y/N)

Specify an action to take when a history is not found:
2 1. Set the history item to zero or spaces and continue processing
 2. Set all rules involving this item out of balance
 3. Skip all balancing rules involving the history item

Set advanced features? N (Y/N) Cross platform history item? N (Y/N)
 F1=Help F2=Split F3=Exit F4=Retain F5=Accept F7=Prev
 F8=Next F9=Swap

The retrieved history item cycle ID is selected based on the Relative Cycle field in the History Items panel (z/OS) or in the History Item dialog box (Windows and UNIX).

Weekly Sales Data

Cycle	Run date	Run time	Relative cycle
20060304	060307	8:00	-000

Variable Cycle

Variable cycle indicator:
1 1. Variable cycle processing not in effect
 2. Compared to cycle ID and most recent run date and time
 3. Compared to most recent run date and time
 4. Compared to most recent cycle number

Variable cycle information:
 Job name: SALES
 Step name: WEEKLY
 Qualifier: Relative cycle: -000 (-998 to +000)

Most recent indicator:
2 1. Use most recent
 2. Exact match only

Is this a cross platform variable cycle history item? N (Y/N)
 F1=Help F2=Split F3=Exit F5=Accept F9=Swap

The variable cycle ID is selected based on the Relative Cycle field in the Variable Cycle panel (z/OS) or in the Variable Cycle dialog box (Windows and UNIX).

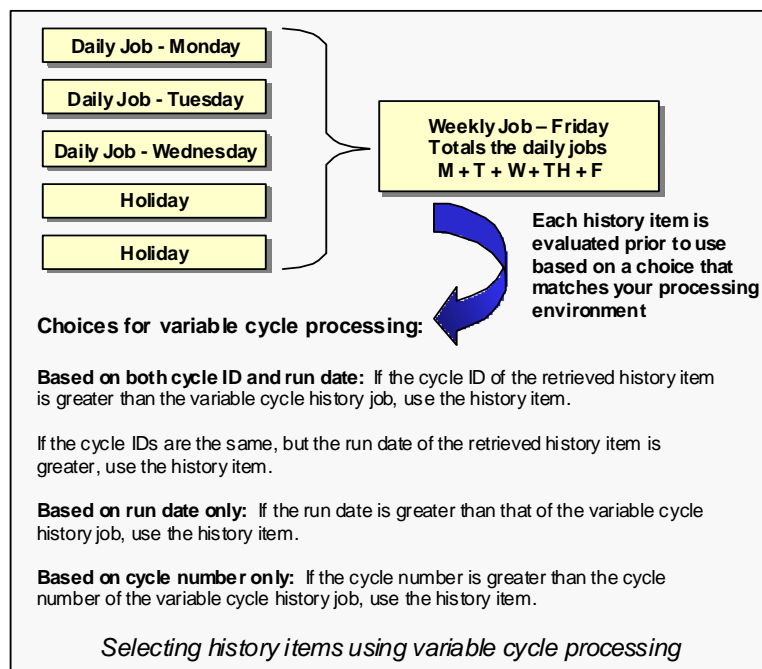
Typically, this is the currently running job, or +000.

Choosing a Variable Cycle Processing Option

When setting up variable cycle processing, you will need to make choices that reflect your processing environment. You have four choices:

- No variable cycle processing (option 1, the default)
- Compared to cycle ID and most recent run date and time (option 2)
- Compared to most recent run date and time (option 3)
- Compared to most recent cycle number (option 4)

By carefully choosing the appropriate option for your site, you can be sure that the history item that ACR/Summary uses for balancing is the correct one.



Options 2, 3, and 4 are described in detail in this section.

Compared to Cycle ID and Most Recent Run Date/Time

This option uses both the cycle ID and the run date and time to select the history item.

This option will use a retrieved history item for balancing if either of the following is true:

- a. The retrieved history item cycle ID is greater than the variable cycle history job's cycle ID. (See "Example A" on page 10.)
- b. The cycle IDs are equal and the run date and time of the retrieved history item is greater than the run date and time of the variable cycle history job's cycle ID. (See "Example B" on page 11.)

When to Use this Option

Use this option when your balancing jobs use the same cycle ID format and it is possible that the retrieved history item cycle ID could be the same as the current job cycle ID.

Example A

The following example shows which history is retrieved when the history is normally retrieved from the day before, but it's not available. ACR/Summary selects the first available history item with an earlier cycle ID. This option accommodates holidays or any other situation where data must be retrieved from the last available history.

Choosing a Variable Cycle Processing Option

Daily Jobs – Provide the history item				
Day	Cycle	Run No.	Run date	Run time
Monday	20060304	001	060304	10:05
Tuesday	20060305	001	060305	10:15
Wednesday	20060306	001	060306	10:02
Holiday			060307	10:12
Holiday			060308	10:03

Daily Job:
Retrieved history cycles have a cycle ID greater than that of the variable cycle job.

Weekly Job – Needs history item for balancing				
Day	Cycle	Run No.	Run date	Run time
Saturday	20060309	001	060309	12:15

Currently Running Job:
Retrieves the history cycles with a cycle ID greater than that of the variable cycle job.

Variable Cycle History Job				
Day	Cycle	Run No.	Run date	Run time
Saturday	20060302	001	060302	10:05

Variable Cycle History Job:
Provides the cycle ID and run date and time used for comparison to determine the histories to include.

Example B

The following example shows how this option can locate history when the cycle IDs are the same.

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Choosing a Variable Cycle Processing Option

Daily Jobs – Provide the history item				
Day	Cycle	Run No.	Run date	Run time
Monday	20060304	001	060304	10:05
Tuesday	20060305	001	060305	10:15
Wednesday	20060306	001	060306	10:02
Thursday	20060307	001	060307	10:12
Friday	20060308	001	060308	09:45

Weekly Job – Needs history item for balancing				
Day	Cycle	Run No.	Run date	Run time
Saturday	20060309	001	060308	12:15

Variable Cycle History Job				
Day	Cycle	Run No.	Run date	Run time
Monday	20060304	001	060304	10:00

Daily Job:
When a cycle ID for the daily history is the same as that of the variable cycle history, items are retrieved based on run date and time.

Currently Running Job:
Processes the selected cycles (see Variable Cycle History Job below) and retrieves items based on run date and time.

Variable Cycle History Job:
Provides the cycle ID and run date and time used for comparison to determine the histories to include.

Compared to Most Recent Run Date and Time

This option relies on the run date and time only for selecting a history item. This option will use a retrieved history item for balancing if its run date and time are greater than the run date and time of the variable cycle job ID.

When to Use this Option

Use this option if your two jobs did not store history in the same cycle number format. For example, if one format is Gregorian and the other format is Julian.

Processing Logic Is Different for this Option

Note that when you choose this option, the processing logic is different:

- When filtering in history records for external item and variable cycle, histories will not be filtered based on cycle number.
- The Variable Cycle Most Recent Indicator will not be used.

Choosing a Variable Cycle Processing Option

- The Equal Cycle Comparison has no effect since *Compared to most recent run date and time* will not exclude histories based on cycle number.

Example

This example shows how ACR/Summary retrieves history based on run date and time alone.

Daily Jobs – Provide the history item				
Day	Cycle	Run No.	Run date	Run time
Monday	03042006	001	060304	10:05
Tuesday	03052006	001	060305	10:15
Wednesday	03062006	001	060306	10:02
Thursday	03072006	001	060307	10:12
Friday	03082006	001	060308	09:45

Weekly Job – Needs history item for balancing				
Day	Cycle	Run No.	Run date	Run time
Friday	20060308	001	060308	10:05

Variable Cycle History Job				
Day	Cycle	Run No.	Run date	Run time
Saturday	20060302	001	060302	10:05

Daily Job:
Daily and weekly jobs have a different cycle format. History is retrieved based on run date and time alone.

Currently Running Job:
Processes the selected cycles (see Variable Cycle History Job below) and retrieves items based on run date and time.

Variable Cycle History Job:
Provides the run date and time used for comparison to determine the histories to include.

Compared to Most Recent Cycle Number

This option uses cycle numbers only, no run numbers. This means it will never retrieve histories that were run on the same cycle number. This option will use a retrieved history item for balancing if its cycle number is greater than the cycle number of the variable cycle history job.

When to Use this Option

Use this option if you always want to retrieve history items from prior cycles. This option is intended for those situations where both of the following are true:

- You use the date for the cycle number.
- If the source job runs on the same day, you do not want the history item.

Example

This example shows how ACR/Summary retrieves history based on cycle number alone and ignores the run number.

Daily Jobs – Provide the history item				
Day	Cycle	Run No.	Run date	Run time
Monday	03022006	002	060302	10:05
Tuesday	03032006	001	060303	10:15
Wednesday	03042006	001	060304	10:02
Thursday	03052006	001	060305	10:12
Friday	03062006	001	060306	09:45

Daily Job:
Retrieved history cycle number is greater than the variable cycle number.

Weekly Job – Needs history item for balancing				
Day	Cycle	Run No.	Run date	Run time
Friday	03062006	001	060306	10:05

Currently Running Job:
Ignores cycles with same cycle number as the variable cycle history job (even if the variable cycle job has a smaller run number) and retrieves from cycle numbers greater than that of the variable cycle history job.

Variable Cycle History Job				
Day	Cycle	Run No.	Run date	Run time
Monday	03022006	001	060302	10:05

Variable Cycle History Job: Provides the cycle ID used for comparison to determine the histories to include.

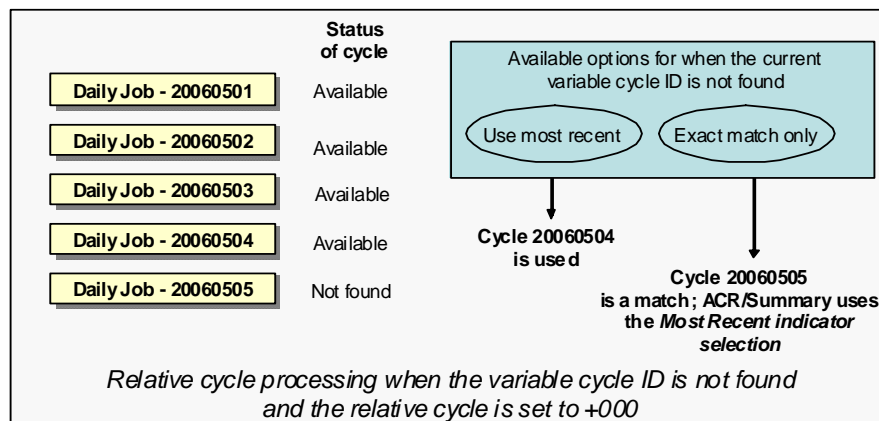
When the Variable Cycle ID Is Not Found

For those situations when the variable cycle ID is not found, you can set the **Most Recent Indicator**.

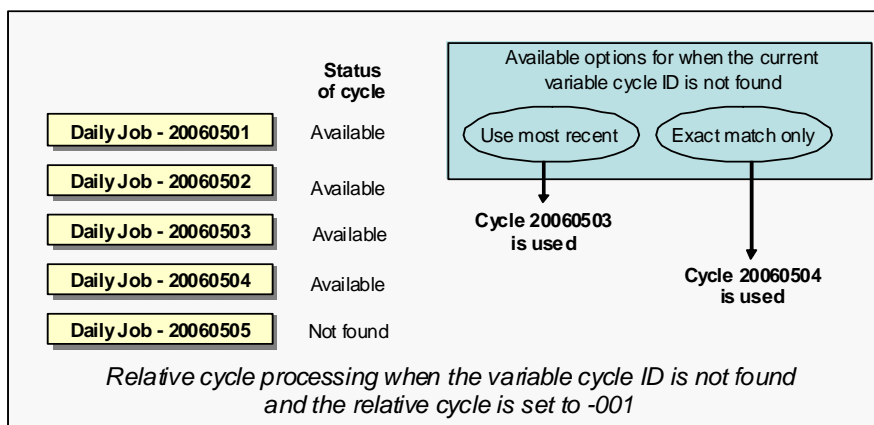
This option lets ACR/Summary automatically choose which values to use based on one of the following:

- Use the most recent cycle as +000. For example, if yesterday's run is the most recent cycle, then yesterday's cycle becomes +000.
- No adjustment; only an exact match is considered +000. In this case, the value you use for the **Most recent indicator** applies.

The graphic below shows how both options work when the relative cycle is set to +000.



The graphic below shows how both options work when the relative cycle is set to -001.



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Choosing a Variable Cycle Processing Option

Tutorial for z/OS

This tutorial will help you set up a complete working example of variable cycle processing on z/OS. It uses data that is available on your product media. Once set up, you can use this example to experiment with different options and see the results.

What You Need To Know Before Starting

Before starting the tutorial, you need the following:

- You must have access to ACR/Summary.
- You must have performed the initial setup for your job cards and initialized the definition database. If you have not done this, see the *ACR/Summary User Guide for z/OS*.
- You must know how to run a balancing job online. If you do not, see the *ACR/Summary User Guide for z/OS*.
- You must have access to the input files shipped on the product media. The names of these files are the following:
 - UNI.TRNGRPT(MONSALES)
 - UNI.TRNGRPT(TUESALES)
 - UNI.TRNGRPT(WEDSALES)
 - UNI.TRNGRPT(SALESTOT)

These files will be using the high-level and middle-level qualifiers assigned during installation of ACR/Summary. When you use the instructions, you will need to prefix your qualifiers.

Verify you can find these files before you start the instructions.

What You Will Learn To Do

You will learn to create a variable cycle processing job by completing the following tasks:

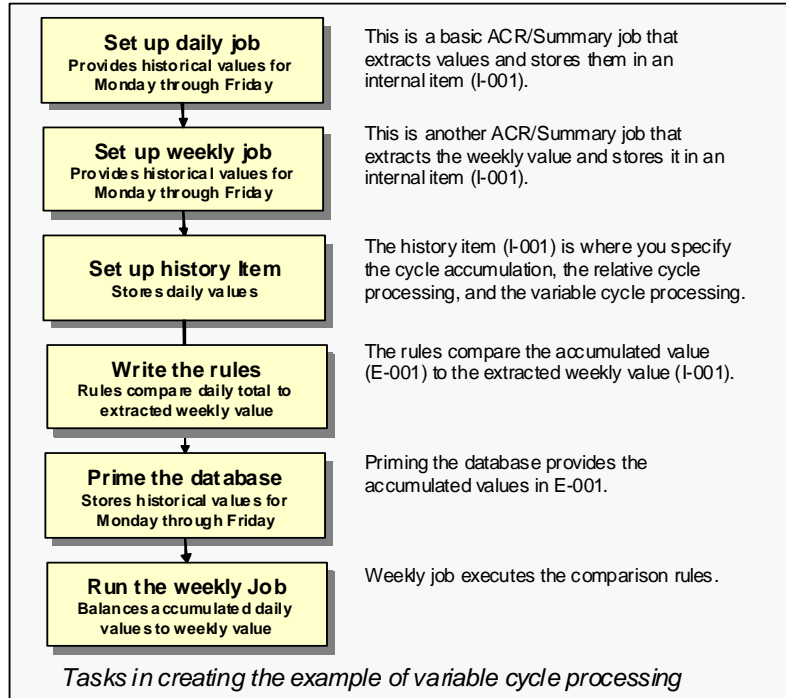
- “Set Up the Daily Job” on page 18
- “Set Up the Weekly Job” on page 25
- “Set Up the History Item” on page 32
- “Write the Rules” on page 34

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Set Up the Daily Job

- “Prime the Database for the First Weekly Run” on page 36
- “Run the Weekly Job” on page 36

The graphic below shows the tasks you will be performing in the example application.



Set Up the Daily Job

In these steps, you will create a basic ACR/Summary job with input sources that provide the values for the internal item I-001.

1. Access an ACR/Summary job window.

2. Select **Job Information** to open the **Job Information** panel.

```

Job Information

Enter a job ID:
Job name:
Step name:
Qualifier:

Enter control report title:

Select options to access:
  Job run options...
  Cycle processing options...
  Alternate job ID information...
  Rerun/audit trail options...
  Extract file options...

F1=Help   F2=Split   F3=Exit   F5=Accept   F9=Swap

```

Note that if you wanted to specify batch cycle processing options, you would select it from this panel. For this example, you will be specifying online cycle options in a later step.

3. Enter the following information:

Job name: **DAYSALLES**

Step Name: **SALES**

Control report title: **DAILY SALES REPORT**

4. Select **Job run options** to open the **Job Run Options** panel.

```

Job Run Options

Select a run option to modify:
  1. Store history...
  2. Set return code...
  3. Perform file control...
  4. Access user exit...
  5. Truncate/round results...
  6. Model definitions...

F1=Help   F3=Exit

```

5. Enter **1. Store history** to open the **Store History** panel.

```

Store History

Store balancing values in history? Y (Y/N/I)
If yes, enter the number of runs to keep: 005 (1-999)

F1=Help   F2=Split   F3=Exit   F5=Accept   F9=Swap

```

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Set Up the Daily Job

6. Enter **005** as the number of histories to keep and press F5. Then press F3 to return to the ACR/Summary Job window. The five histories corresponds to the Monday through Friday accumulation.
7. Select **<New>** under **B. Input Sources** to open the **Input Sources** panel, where you will specify the source of the daily jobs.
8. Complete the **Input Sources** panel.
 - a. Enter the following source data:
File description: **SALES DAILY**
DDNAME: **SALES**
DSName: **XXXX.XXXX.TRNGRPT(MONSALES)**, where
XXXX.XXXX is your high-level and middle-level qualifier of
where your site unloaded the samples datasets.
 - b. Select a file organization of **1. Physical sequential**.
Your input source should look like the following, using your high-level and middle-level qualifiers, before you continue.

```
                                Input Sources

File number: 001
File description: SALES DAILY
File DDNAME: SALES   Qualifier: XX
DSName: XXXX.XXXX.TRNGRPT(MONSALES)

Display the above DSName in the extract window? Y (Y/N)
If yes, specify the range of lines to display: 00001 to 00100

File organization:
1  1. Physical sequential...
   2. VSAM key sequenced (KSDS)...
   3. Direct spool...
   4. DB2...

Is this file a model? N (Y/N)
Use model definitions? N (Y/N)

File DDNAME:
Qualifier:
F1=Help      F2=Split    F3=Exit      F5=Accept    F9=Swap
```

9. Press F5 to open the **Physical Sequential File Information** panel.

10. Enter 6. Select records satisfying selection on one line.

Access mode 6 allows you to process all records in the application file for selection group processing. It does not create a file access area. Access mode 6 tallies or accumulates records that need multiple selection criteria with one input record. You can use this access mode to pick up detail fields that follow or are on the same record as your selection fields.

11. Press F5 to return to the ACR/Summary Job Window and then select **Window > 1. Extract to open the **File ID** panel.**

```

Row 3 from 3
File ID List
SALES      XXXX.XXXX(MONSALES)
***** Bottom of data *****

Command ==>
F1=Help   F3=Exit   F7=Up     F8=Down
    
```

12. Choose **SALES from the **File ID** panel. Your **Extract Window** should contain the following data before you continue.**

```

Extract Window
File name: SALES      LINES 00000011  COL 0001  0072
-----1-----2-----3-----4-----5-----6-----7-
11/25/02  DAILY SALES REPORT

OFFICE      EMPLOYEE      DEPARTMENT      SALES
IL          SMITH,D        6                $347.00
NY          JONES,R        6                $982.00
TX          BACKER,C       5                $1,004.00
NY          BERT,KR       7                $341.00
IL          ABAM,E         1                $828.00
NY          DECKER,W       2                $136.00
TX          BLITT,B        6                $798.00
NY          CANNES,L       8                $2,167.00

Command Line ==>
F1=Help   F2=Split   F3=Exit   F4=Actions  F5=Repeat  F6=Add
F7=Up     F8=Down    F9=Swap   F10=Left   F11=Right
Scroll ==> PAGE
    
```

In this panel, you will be identifying the selection field.

A selection field identifies the line or record that contains the values to be extracted. For example, if you want the system to look for values in all the records that have a numeric character in the first position, you would indicate this in the selection field definition type. Each time the system finds a numeric character in the first position of a record, the system scans the entire record for

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Set Up the Daily Job

other file definitions. If there is not a numeric character in the first position, the system skips the record and goes on to the next.

In this panel, you are going to identify the field TX as the selection field, meaning only those records with TX will be selected for accumulation.

13. Place the cursor on the first character of TX and press F6. This will open a panel in which you can select a definition type.
14. Enter **1. Selection field** to open the **Selection Field** panel.

Notice that the Field position contains **0005**, which is the location of the first character of TX. The line reference at the top shows the source record.

```

                                Selection Field
-----+-----1-----+-----2-----+-----3-----+-----4
Line reference      TX          BACKER,C          5
                   $1,004.00
Input type:  1  1. Input Area    2. Extraction Variable
Field position: 0005_  Field length:  2
Field format:  2  1. Numeric      2. Alphanumeric  3. Packed decimal
                   4. Zoned decimal  5. Binary        6. Unsigned packed
Field type:    3  1. Count        2. Amount        3. Text

----- Selection Criteria -----
If blank is one of the comparison values, it must be entered here.
Value 1: TX_____ Value 2: _____ Additional? N (Y/N)
Selection type: 1  1. Equal to    2. Not =        3. Numeric  4. Alphabetic
                   5. Greater than 6. Less than   7. Blank    8. Nonblank
                   9. Within range 10.Begin =     11.End =    12.Locate =
                   13.Outside range14.Greater = 15.Less =   16.Advance
Extraction variable number:   (1-999)
Additional field?  1  1. Any record  2. Same record  3. Not same record

F1=Help    F2=Split    F3=Exit    F5=Accept    F9=Swap
```

15. Enter the following data and then press F5 to return to the Extract Window.

Field length: **2**

Field format: **2**

Field type: **3** (text)

Value 1: **TX**

Selection type: 1 (Equal to)

This combination says “select the record if the characters in positions 0005 and 0006 are equal to TX.”

Now the detail field needs to be defined to tell ACR/Summary what data to extract once it has found the record identified by TX.

16. Place the cursor on the **1** in the \$1,004.00 amount and press F6 to again open the panel to select a definition type, as shown in **step 13** on page 22.
17. Enter **3. Detail field** to open the **Detail Field** panel.

```

Detail Field

Select an input source:
1_ 1. Input record...
   2. Extraction variable...

Specify a destination:
1_ 1. Internal item...
   2. Extraction variable...

Is this an extended internal item?  N  (Y/N)
F1=Help  F3=Exit
    
```

A detail field contains the values to be extracted and used in rules when balancing is run. Values stored in detail fields can be accumulated if all criteria is met. You can set the system up to add each of the values for that detail field and provide a total.

In this example, the detail field contains the sales amount, which we want accumulated.

18. Press Enter to accept the defaults and open the **Detail Field Source (Input Record)** panel.

```

Detail Field Source (Input Record)

-----+-----1-----+-----2-----+-----3-----+-----4
Line reference      1,004.00

Field position: 0047  Field length: 8  1  1. Numeric
                                           2. Alphanumeric
                                           3. Packed decimal
                                           4. Zoned decimal
                                           5. Binary
                                           6. Unsigned packed

Negative sign indicator to be used instead of default:
Is this field a date field?  N  (Y/N)
Will this field be translated using a translation table?  N  (Y/N)
F1=Help  F2=Split  F3=Exit  F5=Accept  F9=Swap
    
```

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Set Up the Daily Job

19. Enter a field length of 8 and press F5 to open the **Detail Field Destination (Internal Item)** panel.

```
Detail Field Destination (Internal Item)

Assign the extracted detail value
to internal item number:  1 001 (1-100)

Set a processing option for the extracted values:
1_ 1. Accumulate the extracted detail values
   2. Tally the extracted detail values
   3. Extract the last value

F1=Help   F2=Split   F3=Exit   F5=Accept   F9=Swap
```

Detail fields are stored in internal items. In this panel you specify the internal item to use for accumulation and the accumulation option. In a later step, you will perform the setup for the internal item. If you wanted to simply count the number of records that match the selection field criteria, you would select the Tally option.

20. Accept the default of I-001 for the internal item and **1. Accumulate the extracted detail values** and press F5 to open the **Internal Items** panel.

```
Internal Items

Internal
Item number  ----- Description -----
001          TEXAS SALES_____

Print format:      Print the internal item value:
2 1. Count        1 1. In the left column of the control report
   2. Amount       2. In the right column of the control report
   3. Date         3. Item is a calculated item result; print on
   4. Text         left

Print decimals: 0      Calculated item number: 000 (1-100)

Specify an action to take when an internal item is not found:
1 1. Set internal item to zero or spaces and continue processing
   2. The internal item is required for an in-balance condition
   3. Skip all balancing rules involving the internal item

Print commas? 1 1. Default  2. Print  3. Do not print

F1=Help   F2=Split   F3=Exit   F4=Retain   F5=Accept   F7=Prev
F8=Next   F9=Swap
```

21. Enter the following information and then press F5 to return to the Extract Window.

Description: **TEXAS SALES**

Print format: **2. Amount**

Print decimals: **0**

You will use the defaults for the remaining options.

22. Select **View > Definitions**. This will display the definitions you just created. Compare them to the one shown below and correct any errors before continuing.

```

                                Extract Window                                Row 1 to 2 of 2
File name: SALES
      SELECT IF POS 0005 FOR 02 = TX
      TOTAL THE VALUES AT 0047 FOR 08, STORE IN I-001
***** Bottom of data *****
Command Line ==>
F1=Help      F2=Split    F3=Exit     F4=Actions  F7=Up       F8=Down
F9=Swap

```

23. Save your job before continuing.

Set Up the Weekly Job

This job extracts the weekly values and stores it in an internal item.

1. Create a new job for the weekly sales. Enter the following information:
 - Job name: **SALESTOT**
 - Step Name: **SALES**
 - Control report title: **WEEKLY SALES REPORT**

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Set Up the Weekly Job

Verify your job looks like the following and then press F5.

```
Job Information

Job name: SALESTOT
Step name: SALES
Qualifier:

Enter control report title:
WEEKLY SALES REPORT

Select options to access:
  Job run options...
  Cycle processing options...
  Alternate job ID information...
  Rerun/audit trail options...
  Extract file options...

F1=Help    F2=Split    F3=Exit    F5=Accept    F9=Swap
```

2. Select **Job run options** and press F5 to open the **Job Run Options** panel.
3. Enter **1. Store History** to display the **Store History** panel.

```
Store History

Store balancing values in history? Y (Y/N/I)
If yes, enter the number of runs to keep: 002 (1-999)

F1=Help    F2=Split    F3=Exit    F5=Accept    F9=Swap
```

4. Enter **002** as the number of runs to keep and press PF5 to return to the ACR/Summary Job Window.

- Set up your input source as you learned to do in step 7 on page 20. Use the information shown below:

```

                                Input Sources

File number: 001
File description: WEEKLY SALES
File DDNAME: WEEKLYSL  Qualifier:
DSName: XXXX.XXXX.XXXXX(SALESTOT)

Display the above DSName in the extract window? Y (Y/N)
If yes, specify the range of lines to display: 00001 to 00100

File organization:
1  1. Physical sequential...
   2. VSAM key sequenced (KSDS)...
   3. Direct spool...
   4. DB2...

Is this file a model? N (Y/N)
Use model definitions? N (Y/N)

File DDNAME:
Qualifier:
F1=Help    F2=Split    F3=Exit    F5=Accept    F9=Swap

```

- Verify your Job Information window looks like the graphic above and press PF5 to open the **Physical Sequential File Information** panel.
Access Mode 1 selects the first X records from the input source and places them in the file access area (temporary storage). You will specify the X in the **Maximum number of records to process** field in an upcoming step. This access mode is appropriate for input sources where the values to be extracted reside at the top of the file.
- Enter **1. Select first x records** and press PF5 to accept and open the **Record Information** panel.
- Enter 100 records to process and press PF5 to return to the ACR/Summary Job Window.

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Set Up the Weekly Job

9. Select **Window > 1. Extract Window** and then select the **WEEKLYSL** report.

```
Extract Window
File name: WEEKLYSL                LINES 00000008  COL 0001  0072
-----1-----2-----3-----4-----5-----6-----7-
  11/21/02   WEEKLY SALES TOTALS

OFFICE      SALES
  IL        $25,529
  NY        $15,484
  TX         $ 8,621
  -----
TOTAL       $49,634

Command Line ==>
F1=Help      F2=Split    F3=Exit      F4=Actions  F5=Repeat   F6=Add
F7=Up        F8=Down     F9=Swap     F10=Left   F11=Right
Scroll ==> PAGE
```

10. Place the cursor on the T of TX and press F6 to open the **Select a definition type** panel.

```
Select a definition type:

  1. Reference record...
  2. Relative record...
  3. Page/line record...
  4. Embedded key...
  5. Field value...

F1=Help      F3=Exit
```

If you do not see all five selections in the panel, then you did not specify an access mode of 1. Return to [step 6 on page 27](#) and change the access mode before continuing.

11. Enter 4. Embedded Key to open the **Embedded Key Record** panel.

An embedded key finds a record by searching for a text string. The text string in this case is TX.

```

Embedded Key Record

Key value:  -----1-----2-----3-----4
Chars.  1-40 TX      $ 8,621
Chars. 41-80 _____

Start position: 00000 Length: __ Key occurrence: 001
If start position can vary, specify maximum start position: ____

If the key value is missing, bypass this balancing step? N (Y/N)

Use the value of this extraction variable as the embedded key: ____
Extended? N (Y/N)
F1=Help  F2=Split  F3=Exit  F5=Accept  F6=ExtVar  F9=Swap

```

12. Enter a length of 2 and press F5 to return to the **Extract Window**.**13. Place your cursor on the blank space between the \$ and the 8,621** and press F6 to open the **Select a definition type** panel again.

This is the same panel you saw in [step 10 on page 28](#).

14. Enter 5. Field Value to open the **Field Value** panel. In this panel you tell ACR/Summary what to extract after finding the value specified with the embedded key.

```

Field Value

Line reference:  -----1-----2-----3-----4
                  8,621.00

Field position: 00015 Field length: 9      Input field format:
Can this field value position vary? N (Y/N) 1  1. Numeric
                                                2. Alphanumeric
                                                3. Packed decimal
                                                4. Zoned decimal
                                                5. Binary
                                                6. Unsigned packed

Will this be stored as a date in an internal item? N (Y/N)
Will this be stored as a cycle number? N (Y/N)
Is the destination an extended item? N (Y/N)
Will this field be translated using a translation table? N (Y/N)
F1=Help  F2=Split  F3=Exit  F5=Accept  F9=Swap

```

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Set Up the Weekly Job

15. Enter a field length of **9** and press **F5** to open the **Output Value** panel. In this panel, you tell ACR/Summary what format to use for storing the value.

```
Output Value

Specify output format:
2  1. Count
    2. Amount
    3. Text
    4. Cumulative count/amount
    5. Job-step qualifier
    6. Control field for alternate balancing rules

Assign to internal item number: 001
      or
      extraction variable number:

Override sign processing? N (Y/N)

F1=Help  F2=Split  F3=Exit  F5=Accept  F9=Swap
```

16. Enter **2. Amount** as the output format and press **F5** to open the **Internal Items** panel.

```
Internal Items

Internal
Item number  ----- Description -----
001

Print format:          Print the internal item value:
2  1. Count           1  1. In the left column of the control report
   2. Amount         2  2. In the right column of the control report
   3. Date           3  3. Item is a calculated item result; print on
   4. Text           left
Print decimals: _0    Calculated item number: 000 (1-100)

Specify an action to take when an internal item is not found:
1  1. Set internal item to zero or spaces and continue processing
   2. The internal item is required for an in-balance condition
   3. Skip all balancing rules involving the internal item

Print commas? 1 1. Default  2. Print  3. Do not print

F1=Help  F2=Split  F3=Exit  F5=Accept  F6=Cancel  F9=Swap
```

17. Enter a **0** in the **Print decimals** field. This entry is necessary because the input source does not use decimal places.
18. Enter a description of **SALES WEEKLY TOTAL**, press **F5** to return to the Extract Window.

19. Select **View > Definitions** to display the definition you just created. Verify your definition looks like the following:

```

                                Extract Window                                Row 1 to 2 of 2
File name: WEEKLYSL
      OCC 001 OF EMBEDDED KEY=TX
      PICK UP VALUE AT 0015 FOR 09, STORE IN I-001
***** Bottom of data *****

Command Line ==>
F1=Help      F2=Split      F3=Exit      F4=Actions  F7=Up       F8=Down
F9=Swap

```

Correct any errors before continuing.

20. Press F3 to return to the ACR/Summary Job Window.
21. Save your job before continuing.
22. Select **Run > 1. Balancing** to open the **Balancing Run Options** panel.

```

                                Balancing Run Options
Set overrides for one or more of the following:
Cycle number: . . . 20060304
Run number: . . .
Rule set override:
Store history override:      (Y/N/I)

F1=Help      F2=Split      F3=Exit      F5=Accept   F9=Swap

```

The purpose of running a balancing job now is to prime the history database.

23. Run the weekly job one time using the **SALESTOT** input source. Use these options:
- Cycle number: **20060304**
- Run number: [Blank]

Set Up the History Item

The weekly history item (E-001) is where you specify the cycle accumulation, the relative cycle processing, and the variable cycle processing.

The ACR/Summary Job Window must be showing before you continue.

1. Select **<New...>** under **D. History Items** to open the **History Items** panel. You will use this panel to specify that history will come from the DAY SALES job.

History Items	
Item number	Description
001	DAILY SALES TOTAL
History job ID:	
Job name: DAYSALES	Internal item number: I 001 (1-100)
Step name: SALES	
Qualifier: _	Relative cycle: -004 (-998 to +000)
Should most recent cycle be retrieved when cycle does not match current cycle? N (Y/N)	
Specify an action to take when a history is not found:	
2_ 1.	Set the history item to zero or spaces and continue processing
2.	Set all rules involving this item out of balance
3.	Skip all balancing rules involving the history item
Set advanced features? Y (Y/N) Cross platform history item? N (Y/N)	
F1=Help	F2=Split F3=Exit F5=Accept F7=Prev F8=Next
F9=Swap	

2. Complete the **History Items** panel.
 - a. Enter the following information:
 - Description: **DAILY SALES TOTAL**
 - Internal item number: **001**
 - Job name: **DAYSALES**
 - Step name: **SALES**
 - Relative cycle: **-004**
 Use the defaults for the remaining fields.

Note that the relative cycle of -004 provides for each day of the week. For a detailed explanation, see [“What Is Relative Cycle Processing?”](#) on page 4.
 - b. Enter **Y** in the **Set advanced features?** field. This is how you access the variable cycle processing features.

- c. Press F5 to open the **Advanced History Features** panel.

```

Advanced History Features

Select features to access:
Variable cycle...
Cycle accumulation...
Equal cycle comparison...

F1=Help  F2=Split  F3=Exit  F9=Swap

```

This panel is displayed because you entered a Y for the **Set advanced features** field in the previous panel.

3. Select both **Variable Cycle...** and **Cycle accumulation...** and press Enter to open the Variable Cycle panel.

```

Variable Cycle

Variable cycle indicator:
2  1. Variable cycle processing not in effect
   2. Compared to cycle ID and most recent run date and time
   3. Compared to most recent run date and time
   4. Compared to most recent cycle number

Variable cycle information:
Job name: SALESTOT
Step name: SALES
Qualifier:                Relative cycle: -001 (-998 to +000)

Most recent indicator:
2  1. Use most recent
   2. Exact match only

Is this a variable cycle cross platform(XP) history item? N (Y/N)

F1=Help  F2=Split  F3=Exit  F5=Accept  F9=Swap

```

The fields for **Variable Cycle Information** determine the base for your variable cycle.

See “[Choosing a Variable Cycle Processing Option](#)” on page 9 for a detailed explanation of the variable cycle indicator options.

4. Complete the **Variable Cycle** panel:
- a. Enter the following information:
 - Variable cycle indicator: **2. Compared to cycle ID and most recent run date and time**
 - Job name: **SALESTOT**
 - Step name: **SALES**
 - Relative cycle: **-001**
 - Most recent indicator: **Exact Match Only** for the **Most recent indicator**.

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Write the Rules

- b. Press F5 to open the **Cycle Accumulation** panel.

```
                                Cycle Accumulation

Relative
cycle: . . . -004 (-998 to +000)

Specify a cycle accumulation option:
2  1. Retrieve from the relative cycle thru the -001
   2. Retrieve from the relative cycle thru the +000
   3. Do not perform cycle accumulation

F1=Help    F2=Split    F3=Exit    F5=Accept    F9=Swap
```

Cycle accumulation allows you to quickly accumulate values from multiple runs into one history item. For this tutorial, we will have cycle accumulation add all the values it finds from the last five cycles. This includes the -004 relative cycles and the +000 cycle.

See “[What Is Relative Cycle Processing?](#)” on page 4 for more information.

5. Enter a **2. Retrieve from the relative cycle thru the +000** and press F5 to return to the ACR/Summary Job Window.

Write the Rules

In these steps, you will write a rule to compare the value accumulated from the SALES input source (I-001) and the value extracted from the weekly report (E-001).

1. Select **<New...>** under **F. Rules** to open the **Balancing Rules** panel.

2. Enter **1. Standard rule** to open the **Standard Rules** panel.

```

Standard Rules
Rule number: 001  Alternate Balancing Rule?: N
-----Formula-----
LHS: I-001

Balancing operator: = EQ (EQ, NE, GT, LT, GE, LE)
RHS: E-001

Description:
Return code: 3000  Is rule active? Y (Y/N)  Set tolerance? N (Y/N)
Calculated item to process: ___  Print decimals: _

Rule action:          Print format:
1  1. Default          1  1. Count      Print decimals:
   2. Set completion code  2. Amount
   3. Set abend code      3. Date
                           4. Text
Print commas? 1  1. Default  2. Print  3. Do not print

F1=Help    F2=Split    F3=Exit    F4=Retain    F5=Accept    F6=Items
F7=Prev    F8=Next     F9=Swap
    
```

3. Complete the **Standard Rules** panel:

- a. Enter the following data:

LHS: **I-001**

Balancing operator: **EQ**

RHS: **E-001**.

Return code: **3000**.

You can use the defaults for the remaining fields.

- b. Press F5 to open the **Direct Messages** panel.

```

Direct Messages
Message number: 001

Return          Message text
code -----
3000  DAILY TOTALS DO NOT EQUAL WEEKLY TOTAL

Write message to:
1  1. Control report
   2. Console and control report (no response
      required)
   3. Console and control report (response
      required)
F1=Help    F2=Split    F3=Exit    F4=Retain    F5=Accept
F7=Prev    F8=Next     F9=Swap
    
```

4. Enter a message text of **DAILY TOTALS DO NOT EQUAL WEEKLY TOTAL** and press F5 to return to the ACR/Summary Job Window
5. Check your job window and then save the job.

Prime the Database for the First Weekly Run

The very first time you try to run a variable cycle processing job, you will receive error messages. That's because there's no history to use in the balancing. By priming the database, you prepare to run production balancing for the first time.

Run the DAYSALES job three times for Monday, Tuesday, and Wednesday, using the following input sources: MONSALES, TUESALES, WEDSALES.

Increase the cycle number each time:

```
MONSALES: 20060304
TUESALES: 20060305
WEDSALES: 20060306
```

You do not need to use a run number.

Run the Weekly Job

Now that you have historical data available to use in the rules, you are ready to run your first variable cycle processing job.

1. Run the weekly job SALESTOT again. This will now contain the three days worth of information that were extracted with the DAYSALES job.

Use a higher cycle number (20060307) than you used for the SALESTOT primer run.

2. Review your control report. Note the ****VARIABLE CYCLE**** in the History Items section.

If you have an out-of-balance condition, make you have done the following:

- Incremented the cycle numbers correctly
- Changed the input files for each of the daily jobs as described in [“Prime the Database for the First Weekly Run” on page 36](#).

For more information, see [“Troubleshooting and FAQs” on page 57](#).

After you have a working variable cycle processing job, you can experiment with the various options.

Tutorial for Windows

This tutorial will help you set up a complete working example of variable cycle processing on Windows. It uses data that is available on your product media. Once setup, you can use this example to experiment with different options and see the results.

What You Need To Know Before Starting

Before starting the tutorial, you need the following:

- You must have access to ACR/Workbench for Summary or ACR/Summary Client.
- You must have initialized the definition database. If you have not yet done this, see the *ACR/Summary User Guide or Windows and UNIX*.
- You must know how to run a balancing job online. If you do not, see the please use your *ACR/Summary User Guide for Windows and UNIX*.
- You must have access to the input files shipped on the product media. The names of these files are the following:
 - monsales.rpt
 - tuesales.rpt
 - wedsales.rpt
 - salestot.rpt

The default location for these files is the following:

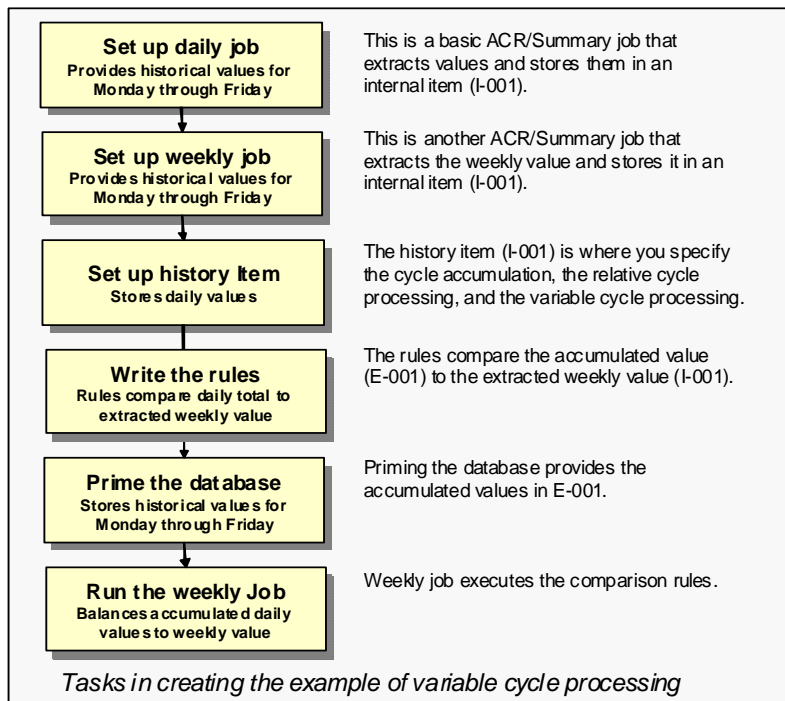
```
c:\Infogix\Summary32\sample
```

What You Will Learn To Do

You will learn to create a variable cycle processing job by completing the following tasks:

- “Set Up the Daily Job” on page 39
- “Set Up the Weekly Job” on page 45
- “Set Up the History Item” on page 50
- “Write the Rules” on page 52
- “Prime the Database for the First Weekly Run” on page 54
- “Run the Weekly Job” on page 55

The graphic below shows the tasks you will be performing in the example application.



Set Up the Daily Job

In these steps, you will create a basic ACR/Summary job with input sources that provide the values for the internal item I-001.

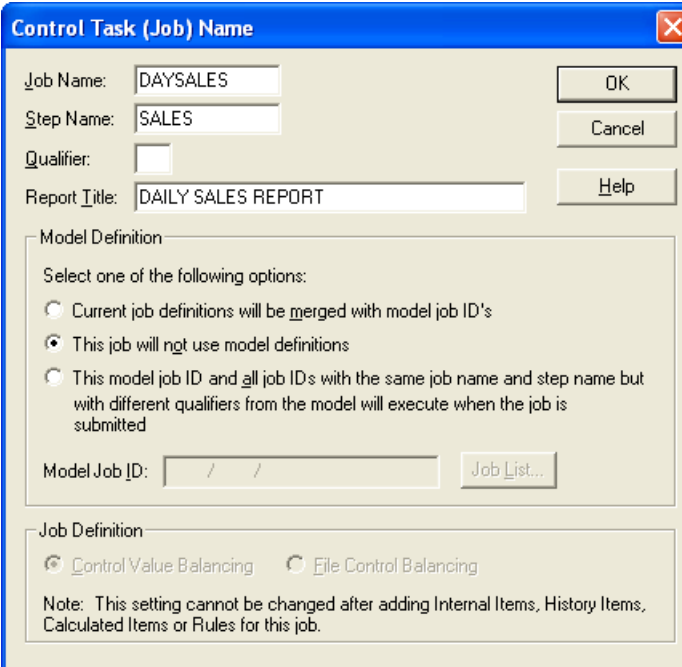
1. Double-click **Name** under **Basic Information** and complete the **Control Task (Job) Name** dialog box with the following information:

Job Name: **DAYSALES**

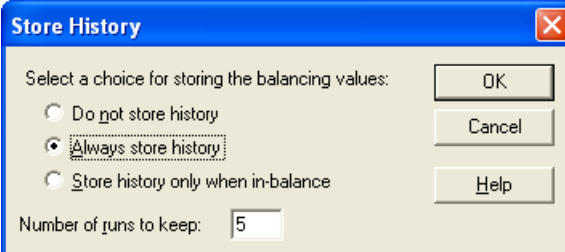
Step Name: **SALES**

Report Title: **DAILY SALES REPORT**

Use the defaults for the remaining options and click OK.



2. Double click **Store History** to open the **Store History** dialog box.

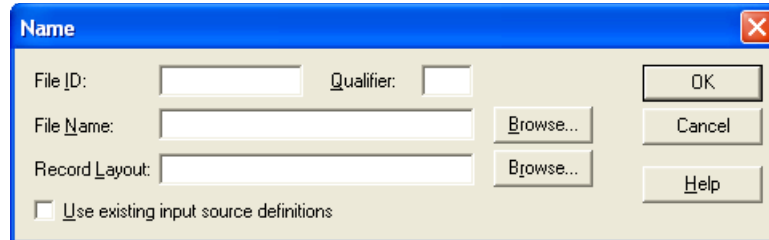


3. Use the default **Always store history** setting, enter **5** as the number of histories to keep, and then click **OK**.
4. Double click **<New...>** under Input Sources to open the **Input Source** view.

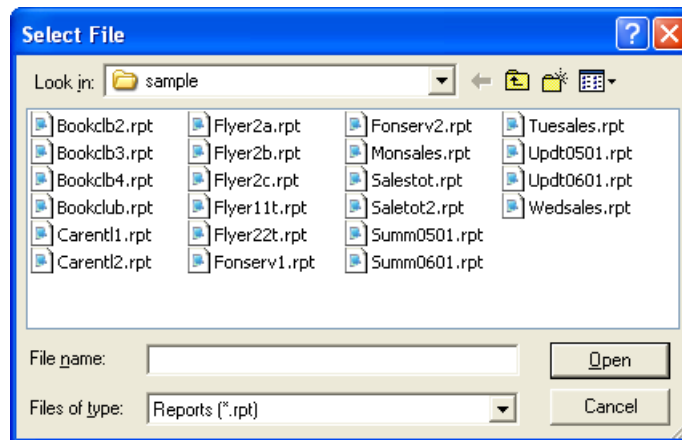
3 ■ Tutorial for Windows

Set Up the Daily Job

5. Double click **Name** under **Basic Information** to open the **Name** dialog box.

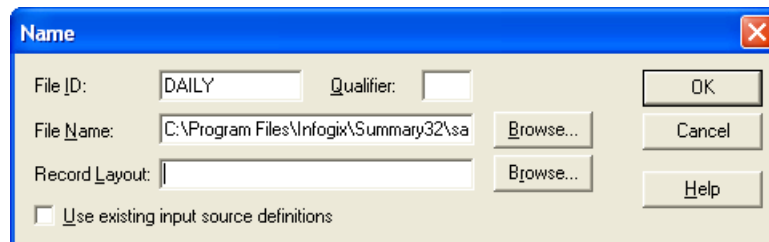


6. Enter a File ID of **SALES** and then click **Browse** next to File Name to open the **Select File** dialog box.



In this dialog box, you will select the input source file for daily sales.

7. Navigate to the Samples folder, select **Monsales.rpt**, and then click **Open** to return to the **Name** dialog box.

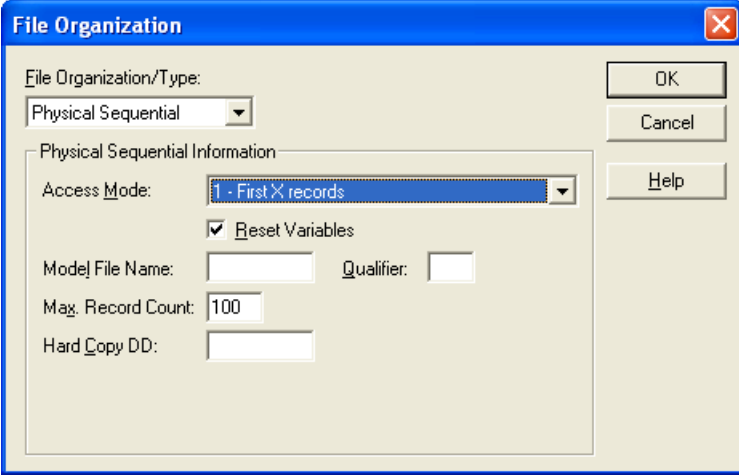


8. Click **OK** to return to the **Input Source** view. The lower pane now shows the **DAILY SALES REPORT** for Monday.

OFFICE	EMPLOYEE	DEPARTMENT	SALES
IL	SMITH, D	6	\$347.00
NY	JONES, R	6	\$982.00
TX	BACKER, C	5	\$1,004.00
NY	BERT, KR	7	\$341.00
IL	ABAH, E	1	\$828.00
NY	DECKER, W	2	\$136.00
TX	BLITT, B	6	\$798.00
NY	CANNES, L	8	\$2,167.00
IL	DUNN, C	3	\$8,598.00
NY	LANG, D	3	\$288.00
TX	BACKSTER, Y	1	\$707.00
NY	SPIEL, RL	4	\$693.00
IL	LEWIS, G	7	\$891.00

Ln 7, Col 90 0
For Help, press F1

9. Double click **File Description** to open the **File Description** dialog box.
10. Enter **SALES DAILY** and click **OK** to return to the **Input Source** view.
11. Double click **File Organization** to open the **File Organization** dialog box.



The **File Organization** dialog box is shown with the following settings:

- File Organization/Type:** Physical Sequential
- Physical Sequential Information:**
 - Access Mode:** 1 - First X records
 - Reset Variables**
 - Model File Name:** [] **Qualifier:** []
 - Max. Record Count:** 100
 - Hard Copy DD:** []

Buttons: OK, Cancel, Help

12. Select **6 - Select records that match 1 line** from the Access Mode list and click **OK**.

Access mode 6 allows you to process all records in the application file for selection group processing. It does not create a file access area. Access mode 6 tallies or accumulates records that need multiple selection criteria with one input record. You can use this access mode to pick up detail fields that follow or are on the same record as your selection fields.



13. Highlight TX in the lower pane and then click the **Selection** button in the toolbar to open the **Selection Field** dialog box.

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Set Up the Daily Job

Selection Field

Selection Information

Select from: Input Area

Position: 00005 Length: 02 Format: Text

Type: Text

<unavailable>

Comparison

Type: Equal To

Same Record: Can be on same or diff.

Compare Against

Compare to: Constants

Value 1: TX

Value 2:

Additional Value 1 Additional Value 2 Add... Change... Delete

Because you selected the key value from the report using the mark-and-capture method, the selection fields in this dialog box are already complete.

We are also going to use the default comparison type of Equal to. This dialog box now says “select the record if the characters in positions 0005 and 0006 are equal to TX.”

14. Click **OK** to return to the **Input Source** view, which now shows the selection criteria under Record/Field definitions.

Record/Field Definitions

Select if position 5 for a length of 2 is equal to TX

< New... >

OFFICE	EMPLOYEE	DEPARTMENT	SALES
IL	SMITH, D	6	\$347.00
NY	JONES, R	6	\$982.00
TX	BACKER, C	5	\$1,004.00
NY	BERT, KR	7	\$341.00
IL	ABAM, E	1	\$828.00
NY	DECKER, W	2	\$136.00
TX	BLITT, B	6	\$798.00
NY	CANNES, L	8	\$2,167.00
IL	DUNG, C	3	\$8,598.00
NY	LANG, D	3	\$288.00
TX	BACKSTER, Y	1	\$707.00
NY	SPIEL, RL	4	\$693.00
IL	LEWIS, G	7	\$891.00

Ln 6, Col 7

For Help, press F1

15. Highlight 1,004.00 in the lower pane and then click the **Detail** button in the toolbar to open the **Detail Field** dialog box.

A detail field contains the values to be extracted and used in rules when balancing is run. Values stored in detail fields can be accumulated if all criteria is met. You can set the system up to add each of the values for that detail field and provide a total.

In this example, the detail field contains the sales amount, which we want accumulated.

Because you selected the key value from the report using the mark-and-capture method, the fields in this dialog box are already complete.

Now you need to specify where to store the value the detail field will pick up.

16. Click **Create** to open the **Internal Item** dialog box.

17. Enter the following information and then click **OK** to return to the

Name: **TEXAS SALES**

Description: **DAILY TEXAS SALES**

Format: **Amount**

Decimals: **2**

Print commas: **Yes**

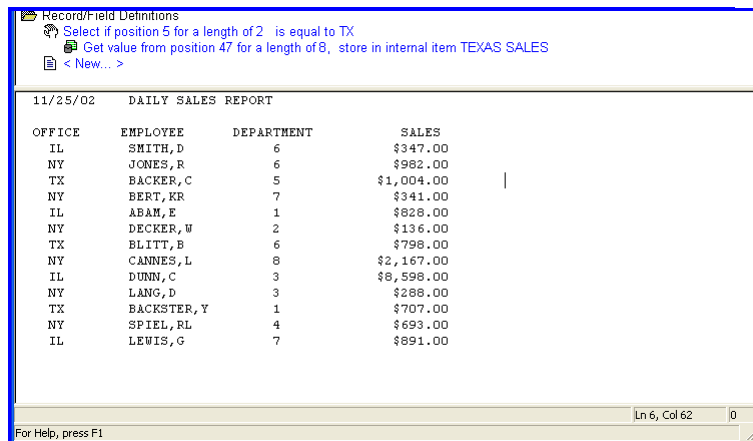
3 ■ Tutorial for Windows

Set Up the Daily Job

Use the defaults for the remaining fields.

18. Click **OK** to return to the **Detail Field** dialog box and then click **OK** again to return to the **Input Source** view.

The internal item storage information is now showing under the selection criteria.



Record/Field Definitions

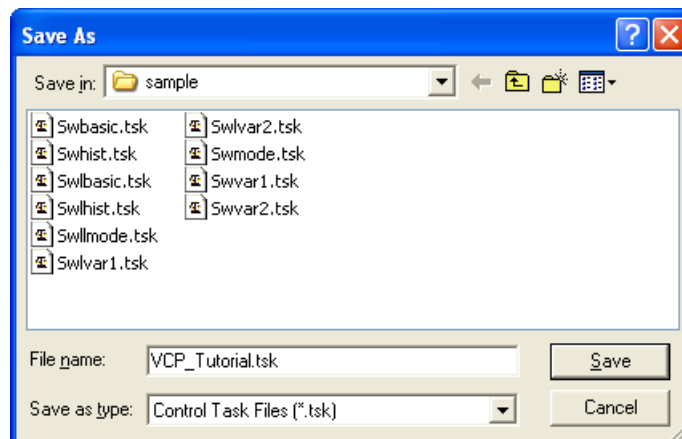
Select if position 5 for a length of 2 is equal to TX
Get value from position 47 for a length of 8, store in internal item TEXAS SALES
< New... >

11/25/02 DAILY SALES REPORT

OFFICE	EMPLOYEE	DEPARTMENT	SALES
IL	SMITH, D	6	\$347.00
NY	JONES, R	6	\$982.00
TX	BACKER, C	5	\$1,004.00
NY	BERT, KR	7	\$341.00
IL	ABAM, E	1	\$828.00
NY	DECKER, W	2	\$136.00
TX	BLITT, B	6	\$798.00
NY	CANNES, L	8	\$2,167.00
IL	DUNN, C	3	\$8,598.00
NY	LANG, D	3	\$288.00
TX	BACKSTER, Y	1	\$707.00
NY	SPIEL, RL	4	\$693.00
IL	LEWIS, G	7	\$891.00

Ln 6, Col 62 0
For Help, press F1

19. Check your work against the above graphic and correct any errors before continuing. Then select **File > Save**.

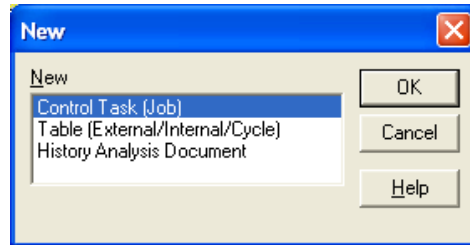


20. Enter **VCP_Tutorial.tsk** as the file name and click **Save**.

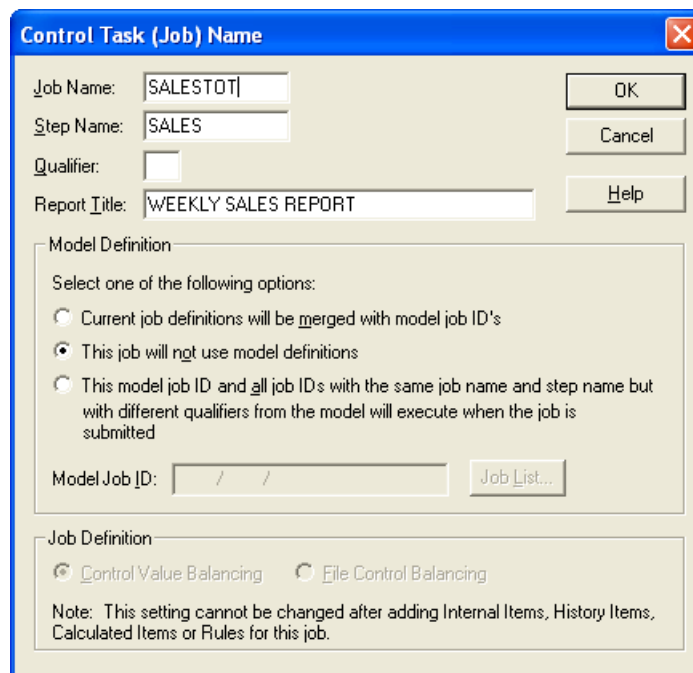
Set Up the Weekly Job

This job extracts the weekly values and stores it in an internal item.

1. Select **File > New** to open the **New** dialog box.



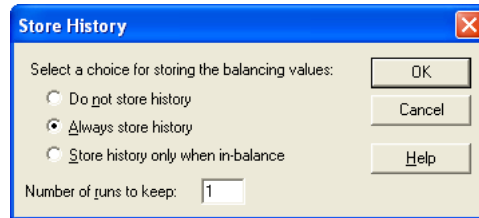
2. Click **OK** to accept the default of **Control Task (Job)**. A new Control Task (Job) window is displayed.
3. Double click **Name** to open the **Control Task (Job) Name** dialog box.



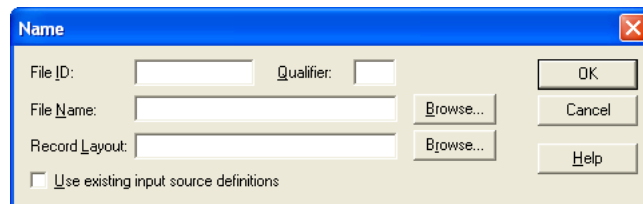
4. Enter the following information:
 Job Name: **SALESTOT**
 Step Name: **SALES**
 Report title: **WEEKLY SALES REPORT**
5. Click **OK** to return to the **Control Task (Job)** window.
6. Double click **Store History** to open the **Store History** dialog box.

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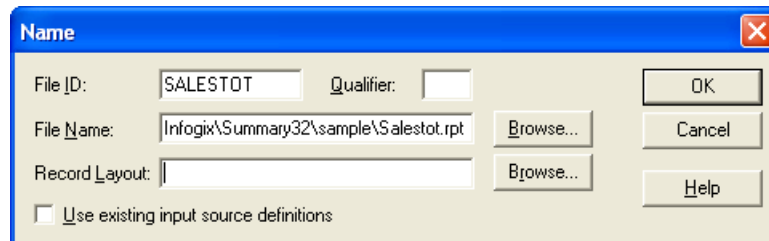
Set Up the Weekly Job



7. Enter **2** as the number of runs to keep and click **OK** to return to the **Control Task (Job)** window.
8. Double click **Input Sources** to open the **Input Source** view.
9. Double click **Name** to open the **Name** dialog box.



10. Enter **SALESTOT** as the file ID.
11. Click **Browse** next to **File Name** and navigate to the Samples folder.
12. Select **Salestot.rpt** and click **OK**.



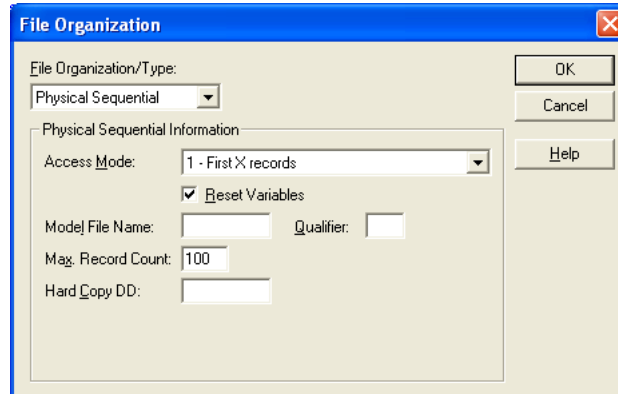
13. Click **OK** to return to the **Input Source** window. The Weekly Sales Totals report is now showing in the lower pane.

11/21/02 WEEKLY SALES TOTALS	
OFFICE	SALES
IL	\$25,529
NY	\$15,484
TX	\$ 8,621

TOTAL	\$49,634

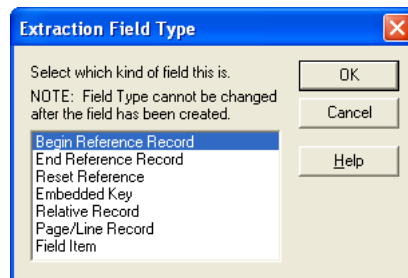
Ln 6, Col 61 0

14. Double click **File Organization** to open the **File Organization** dialog box.



Access Mode 1 selects the first X records from the input source and places them in the file access area (temporary storage). This access mode is appropriate for input sources where the values to be extracted reside at the top of the file.

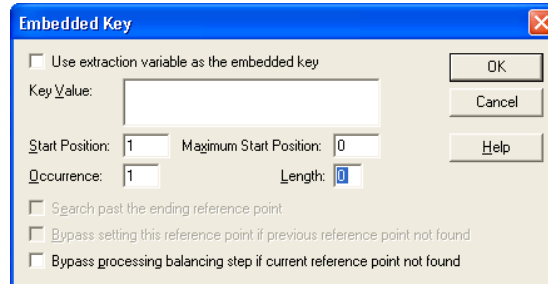
15. Verify that the **Access Mode** is **1- First X records** and the **Max Record Count** is **100**, then click **OK** to return to the Input Source window.
16. Double click **<New...>** under **Record/Field Definitions** to open the **Extraction Field Type** dialog box.



3 ■ Tutorial for Windows

Set Up the Weekly Job

17. Select **Embedded Key** and click **OK** to open the **Embedded Key** dialog box.



The **Embedded Key** dialog box has a blue title bar with a close button. It contains the following fields and options:

- Use extraction variable as the embedded key
- Key Value: [Text Box]
- Start Position: [1] Maximum Start Position: [0]
- Occurrence: [1] Length: [0]
- Search past the ending reference point.
- Bypass setting this reference point if previous reference point not found
- Bypass processing balancing step if current reference point not found

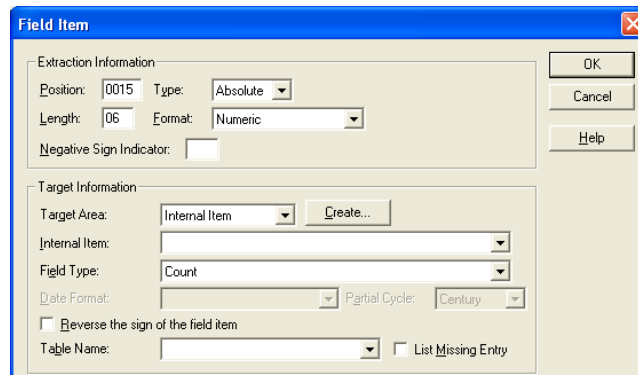
Buttons: OK, Cancel, Help.

18. Enter a **Key Value** of **TX** and **Length** of **2** and click **OK** to return to the **Input Source** window.

Your new extraction definition is now showing in the **Record/Field Definitions** section.

19. Select 8,621 so that it is highlighted and the highlight includes the space between the \$ and the 8,521.

20. Click the **Field Item** icon to open the **Field Item** dialog box.

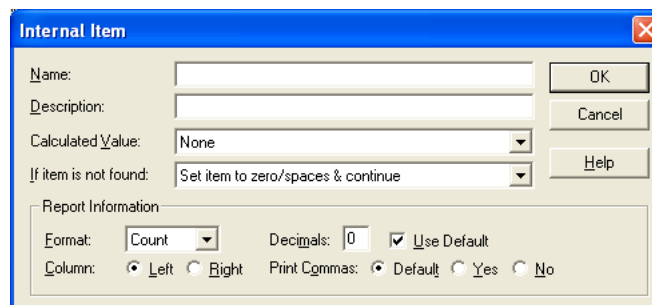


The **Field Item** dialog box has a blue title bar with a close button. It contains the following fields and options:

- Extraction Information:
 - Position: [0015] Type: [Absolute]
 - Length: [06] Format: [Numeric]
 - Negative Sign Indicator: []
- Target Information:
 - Target Area: [Internal Item] [Create...]
 - Internal Item: []
 - Field Type: [Count]
 - Date Format: [] Partial Cycle: [Century]
 - Reverse the sign of the field item
 - Table Name: [] List Missing Entry

Buttons: OK, Cancel, Help.

21. Enter a field length of **6**, a Field Type of **Amount**, and then click **Create** to open the **Internal Item** dialog box.



The **Internal Item** dialog box has a blue title bar with a close button. It contains the following fields and options:

- Name: [Text Box]
- Description: [Text Box]
- Calculated Value: [None]
- If item is not found: [Set item to zero/spaces & continue]
- Report Information:
 - Format: [Count] Decimals: [0] Use Default
 - Column: Left Right Print Commas: Default Yes No

Buttons: OK, Cancel, Help.

22. Enter the following information:
 Name: **DAILY WEEKLY TOTAL**
 Description: **DAILY WEEKLY TOTAL**
 Format: **Amount**
 Decimals: **0**
23. Click **OK** to return to the **Field Item** dialog box and then click **OK** again to return to the **Input Source** window.
24. Save your Control Task as **VCP_Tutorial2.tsk**.
25. Select **Run > Balancing** to open the **Balancing** dialog box.

Balancing

Current Databases
 Definition: C:\Program Files\Unitech Systems\...\Unidf.dat
 History: C:\Program Files\Unitech Systems\...\Unihf.dat

Runtime Parameters
 Job ID: SALESTOTSALES
 Cycle Number: 20060304 Run Number: 0 Control Field: 0
 Allow input record length > 256
 Store history override: No override (use value in definitions)

File Interface Input:

File ID	File Name	Type	Trac
SALESTOT	C:\Program Files\Unitech Systems\Summa	Input Source	Not

26. Run the weekly job one time using the SALESTOT input source and a cycle number of 20060304.
27. Select **View > Open** all reports. You will find a report with the following message:

```
#RUF1006V: SALESTOT/SALES / RECORD SPECIFIED NOT FOUND: SALESTOT 000001 F2 000 PROCESSING WILL CONTINUE.  
STEP COMPLETION CODE 0000
```

28. This message indicates that no history is available to use for balancing. This is OK and now your history data is primed for later runs.
29. Close the message and view your Control Report.
30. Select **File > Close** to return to the Input Source window.

3 ■ Tutorial for Windows

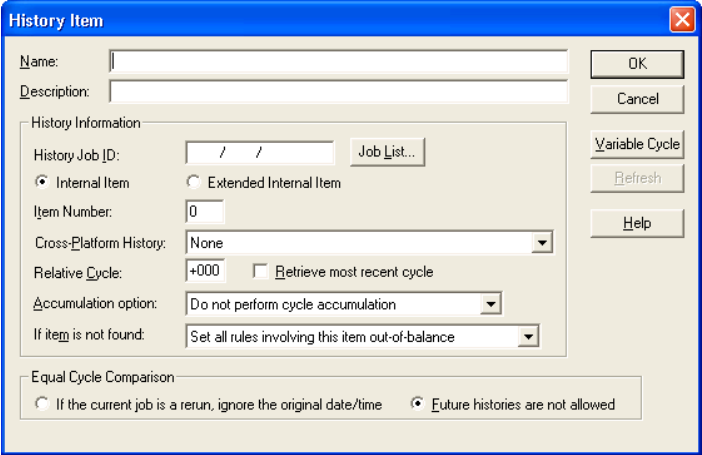
Set Up the History Item

31. Select **Window > Control Task (Job) SALESTOTSALES** to return to you control task.

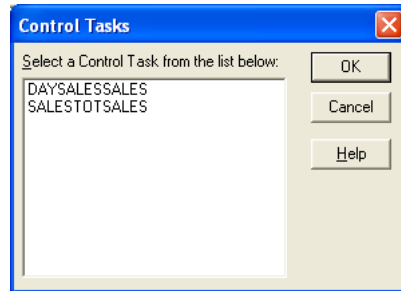
Set Up the History Item

The weekly history item (E-001) is where you specify the cycle accumulation, the relative cycle processing, and the variable cycle processing.

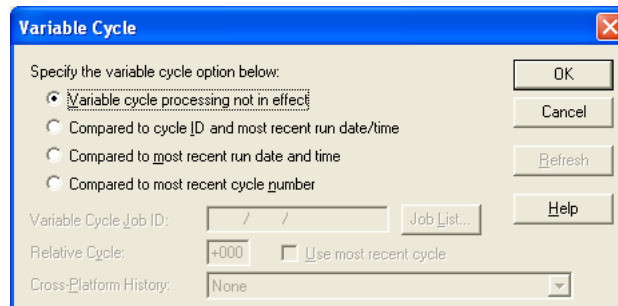
1. Double click **<New...>** under **History Items** to open the **History Item** dialog box.



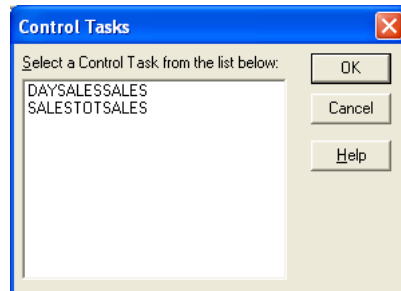
2. Enter the following information:
Name: **DAILY SALES TOTAL**
Description: **DAILY SALES TOTAL**
Internal Item Number: 001
Relative cycle: **-004**
Accumulation option: **Retrieve from the relative cycle through +000**
3. Click **Job List** to open the **Control Tasks** dialog box.



4. Select **DAYSALES/SALES** and click **OK** to return to the **History Item** dialog box.
5. Click **Variable Cycle** to open the **Variable Cycle** dialog box.



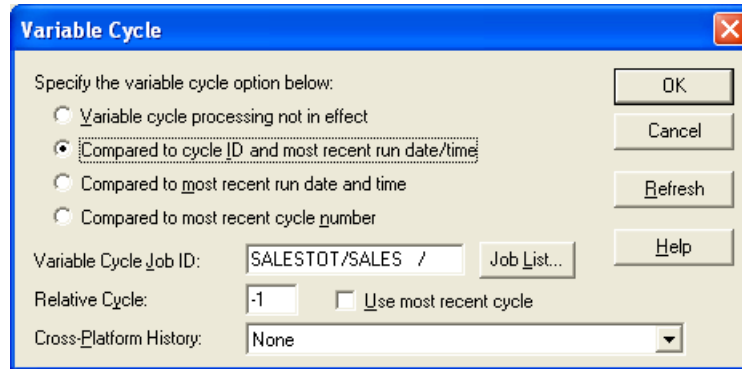
6. Select **Compared to cycle ID and most recent run date** and time.
7. Click **Job List** to open the **Control Tasks** dialog box.



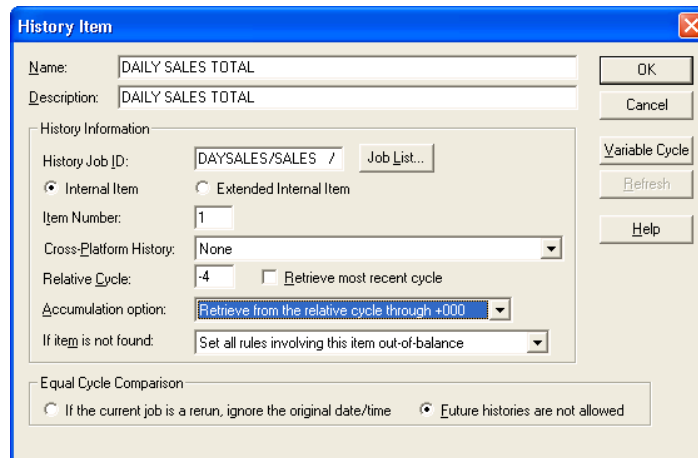
8. Select **SALESTOTSALES** and click **OK** to return to the **Variable Cycle** dialog box.
9. Enter a **Relative Cycle** of **-1**.
10. Verify your variable Cycle dialog box looks like the following and then click **OK**:

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Write the Rules



11. Verify your **History Item** dialog box looks like the following.

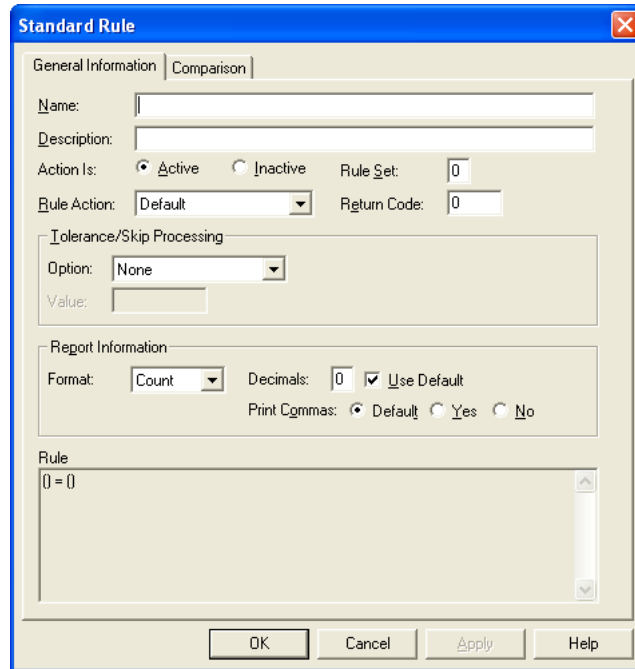


Click **OK** to return to the Control Task (Job) window.

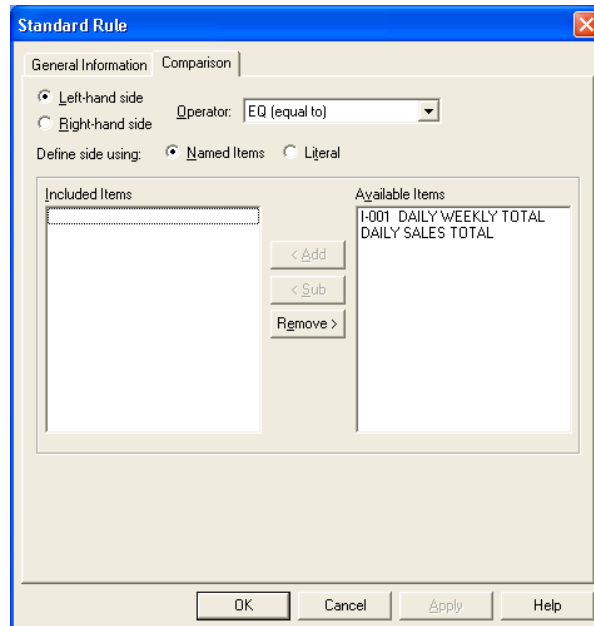
Write the Rules

In these steps, you will write a rule to compare the value accumulated from the SALES input source (I-001) and the value extracted from the weekly report (E-001).

1. Double click **<New...>** under rules to open the **Rule Type** dialog box.
2. Click **OK** to select the default of **Standard Rule** and to open the Standard Rule dialog box.



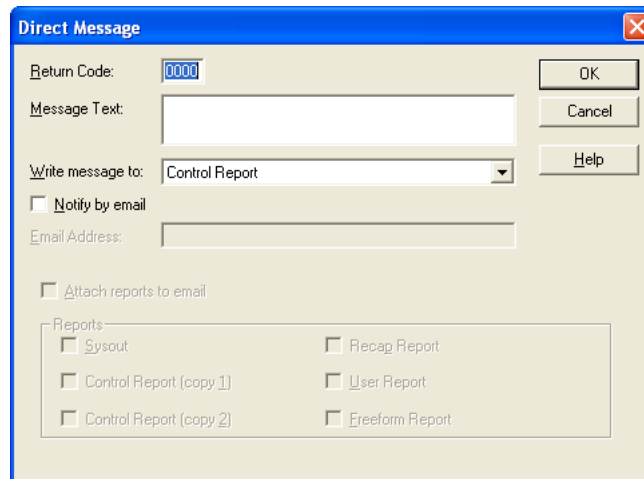
3. Enter the following data in the **General Tab**:
 Name: **COMPARE DAILY TOTALS TO WEEKLY TOTALS**
 Description: **COMPARE DAILY TOTALS TO WEEKLY TOTALS**
4. Click the **Comparison** tab.



3 ■ Tutorial for Windows

Prime the Database for the First Weekly Run

5. Be sure the **Left-hand side** radio button is selected, then click **DAILY SALES TOTAL** in the **Available Items** list, then click **<Add>**.
6. Click the **Right-hand side** radio button.
7. Select **DAILY WEEKLY TOTAL** in the **Available Items** list and click **<Add>**.
8. Click **OK** to return to the **Control Task (Job)** window.
9. Double click **<New...>** under Messages to open the **Message Type** dialog box.
10. Click **OK** to accept the **Direct Message** default and open the **Direct Message** dialog box.



The screenshot shows a 'Direct Message' dialog box with the following fields and options:

- Return Code:** 0000
- Message Text:** (empty text box)
- Write message to:** Control Report (dropdown menu)
- Notify by email**
- Email Address:** (empty text box)
- Attach reports to email**
- Reports:**
 - Sysout
 - Recap Report
 - Control Report (copy 1)
 - User Report
 - Control Report (copy 2)
 - Freeform Report

Buttons: OK, Cancel, Help

11. Enter a return code of **3000** and a message of **DAILY TOTALS DO NOT EQUAL WEEKLY TOTAL**.
12. Click **OK** to return to the **Control Task (Job)** window.

Prime the Database for the First Weekly Run

The very first time you try to run a variable cycle processing job, you will receive error messages. That's because there's no history to use in the balancing. By priming the database, you prepare to run production balancing for the first time.

1. Open your DAYSALLES Control Task (Job).
2. Select Run > Balancing to open the **Balancing** dialog box.
3. Run the DAYSALLES job three times—once for Monday, Tuesday, and Wednesday, using the following input sources: Monsales.rpt, Tuesales.rpt, Wedsales.rpt.

Increase the cycle number each time:

Monsales.rpt: 20060304

Tuesales.rpt: 20060305

Wedsales.rpt: 20060306

You do not need to use a run number. Verify you have a step completion code of 000 after each run.

Run the Weekly Job

Now that you have historical data available to use in the rules, you are ready to run your first variable cycle processing job.

1. Run the weekly job SALESTOT again. This will now contain the three days worth of information that were extracted with the DAYSALES job.

Use cycle number 20060307 for this run.

2. Review your control report. If you have an out-of-balance condition, make you have done the following:
 - Incremented the cycle numbers correctly
 - Changed the input files for each of the daily jobs as described in [step 3 on page 54](#).

For more information, see “[Troubleshooting and FAQs](#)” on [page 57](#).

After you have a working variable cycle processing job, you can experiment with the various options.

3 ■ Tutorial for Windows

Run the Weekly Job

Troubleshooting and FAQs

Troubleshooting

These steps provide a guideline for you to troubleshoot your variable cycle processing job.

Step 1. Check for Messages in the SYSOUT

If you find an error message, check the explanation in the message and codes guide. Below are the error messages most commonly associated with variable cycle processing.

#UAN125W NO INFORMATION IN UNITECH DATABASE FOR VARIABLE CYCLE REFERENCE JOB ID *CYCLE REFERENCE JOB/STEP/QUALIFIER*: PROCESSING WILL CONTINUE USING 00000000 AS THE VARIABLE REFERENCE CYCLE NUMBER

You are missing the reference job ID in the definition database. By substituting zero, processing will continue.

#UBS028W NO ENTRY IN CYCLE TABLE FOR RELATIVE CYCLE *CYC#. JOB-ID* E-999 NOT FOUND

You have specified the use cycle table option, but the cycle number for the history item that you specified could not be located in the cycle table. Ensure that you specified the correct history item and check to see if the cycle ID and the job ID are valid.

#UBS029W NO HISTORY IN UNITECH DATABASE FOR VARIABLE CYCLE REFERENCE JOB *CYC-JOB-ID* USED BY *CURRENT JOB-ID* E-999

The variable cycle reference job ID for the history item was not found in your history file. Therefore, the history item cannot be processed. Check to see if the variable cycle job ID was changed or deleted and then confirm your spelling of the variable cycle reference job ID.

4 ■ Troubleshooting and FAQs

Troubleshooting

Step 2. Check Your Control Report

If your input jobs run OK, but the balancing job does not, check your control report for the ****VARIABLE CYCLE**** message in the INPUT column, as shown below.

DESCRIPTION							INPUT	OUTP
SALES WEEKLY TOTAL							\$8,621	
DESCRIPTION							INPUT	OU
EM	CYCLE	CYCLE#	RUN#	RUNDATE	RUNTIME	PROGRAM	INPUT	OU
01	-004	20060304	000	06/04/12	15.23.31	UAC2000	\$8,621.00 **VARIABLE CYCLE**	

If you are missing the message, then you have not set up your job for variable cycle. If you are using z/OS, review the steps in [“Set Up the History Item” on page 32](#). If you are using Windows, review the steps in [“Set Up the History Item” on page 50](#).

Step 3. Check for Discrepancies Using the List Definition Utility

Discrepancies in jobs and file definitions can cause unpredictable results. To troubleshoot, you can print the history database and the definition database and review the contents.

The following lists some potential problems you can look for:

Job Definition Problems—Look for the following:

- Incorrect format of an item
- Incorrect extraction from history database
- Calculation value is incorrect
- Logic in rules is wrong

File Definition Problems—File definitions tell the system how to extract data values from the input file for balancing/reconciliation.

- Incorrect reporting of an internal item
- Values are missing
- Truncation of an internal item

Running the List Definition Utility on z/OS

1. Select **Setup > 4. Database Utilities** to open the **Database Utilities** panel.

2. Select **1. Database report utilities** to open the **Database Report Utilities** panel.
3. Select **1. List definitions** to open the **Library Information** panel.
4. Enter your dataset name and member name and press F5 to open the **List Definitions** panel.
5. Verify that the job name and definition database name are the ones you want and then select **2. Files** to open the **File Definitions** panel.
6. Enter the file DDName and qualifier. Leave blank to list all definitions. When you press F5, the JCL to list your definitions displays.
7. Submit the JCL and review the output.

Running the List Definition Utility on Windows

Select **Run > Database Utilities > List Definitions** to open the **List Definitions** panel. Select the list type to run from the drop-down list.

Step 5: Browse History for an Extraction Problem

History browse lets you look at the contents of your history database. It allows you to view the following:

- Job ID
- Status of the job
- Highest return code set by balancing
- Cycle number, run number, run date and start time
- Internal item numbers, descriptions and values
- Rerun information.

Note: When history browse is executed, the definition database cannot be read or updated by any other job.

To browse history on z/OS, perform these steps:

1. Select **Run > 2. On-Line options** to open the **On-Line Options** panel.
2. Select **4. Perform history browse** to open the **History Browse** panel.
3. Enter your history database fully qualified name to open the Job ID selection list.
If you want to filter the results, enter a **Y** to the **Set search criteria for data viewing?** This will display an additional panel for filtering.
4. Select your job from the list and press Enter.

Frequently Asked Questions

This sections answers the questions Infogix hears most often about variable cycle processing.

What is the difference between a cycle number and a run number?

A run number helps ACR/Summary distinguish between two jobs that have the same cycle number. If you are running two jobs on the same day and using the date as the cycle number, their cycle number will be the same. Use the run number to separate them.

Do I have to use both a cycle number and a run number?

If you do not need to distinguish between cycle numbers for any reason, use the default run number of 000.

Why do I get error messages the first time I run my variable cycle processing job?

You need to prime the database so there is data to use. If you are on z/OS, see [“Prime the Database for the First Weekly Run”](#) on page 36. If you are on Windows, see [“Prime the Database for the First Weekly Run”](#) on page 54.