

***TDC 3000x R500
US Implementation***

***Lab Exercise and
Evaluation***

***R500—Add History Values
to a Schematic***

L5437L
LCN

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Lab Exercise

Overview

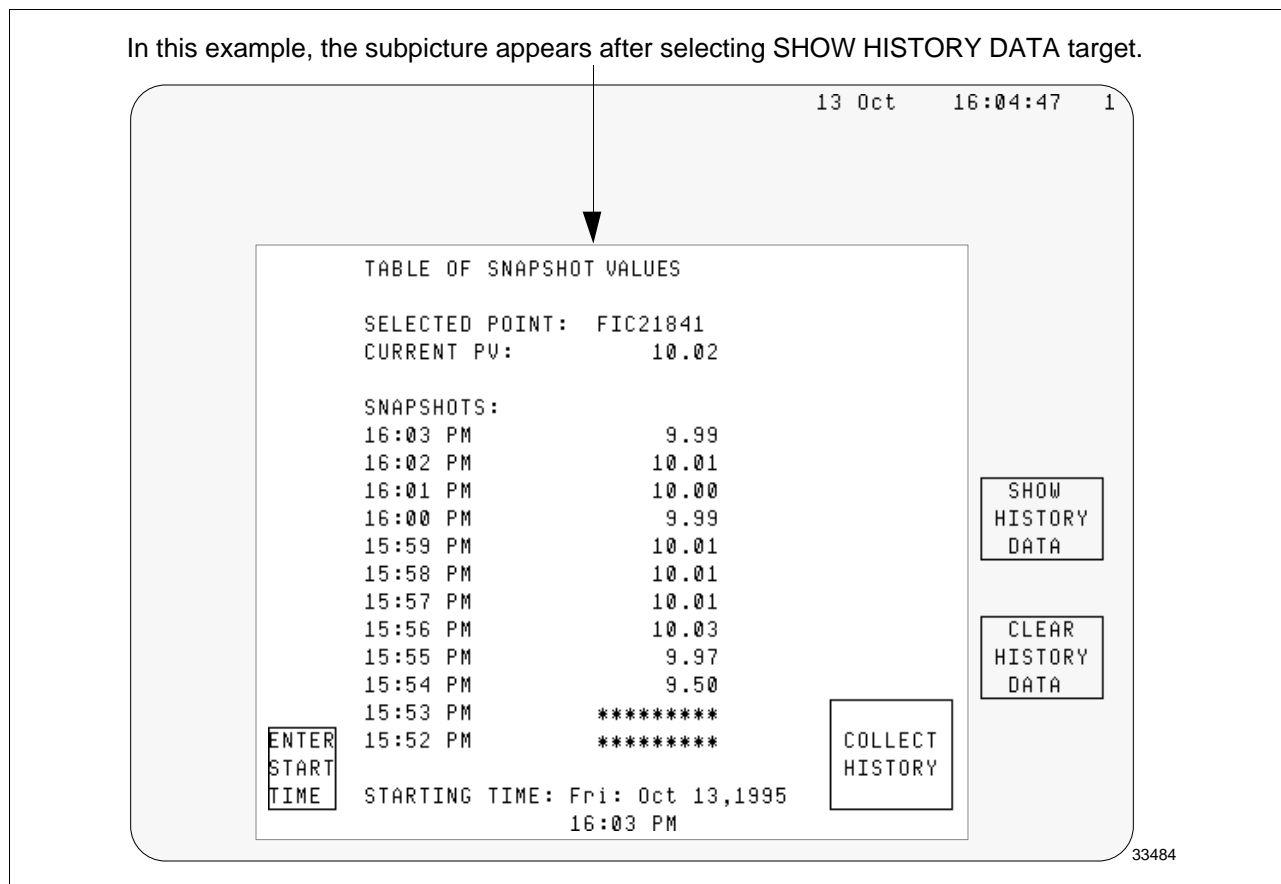
Introduction

In R500, all of the history data collectors previously used in Free Format Logs can also be used in schematics to display historical averages and snapshots.

In addition, new *indirect* history data collectors are provided for schematics (they do not apply to FFLs). The indirect collectors provide a mechanism for the operator to select the point and/or parameters, instead of you specifying them at build time. You may also allow the operator to enter the start date/time to be used in the history retrieval.

In this lab exercise you will build a display similar to Figure 1, using the *indirect* history collectors and the new history collection actor that initiates history data retrieval.

Figure 1 History Retrieval Schematic



Objective

Given a description of history data requirements for a schematic, build the schematic to meet the requirements, using these R500 enhancements:

- indirect collectors, and
- the history collection actor.

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Overview, Continued

ATTENTION

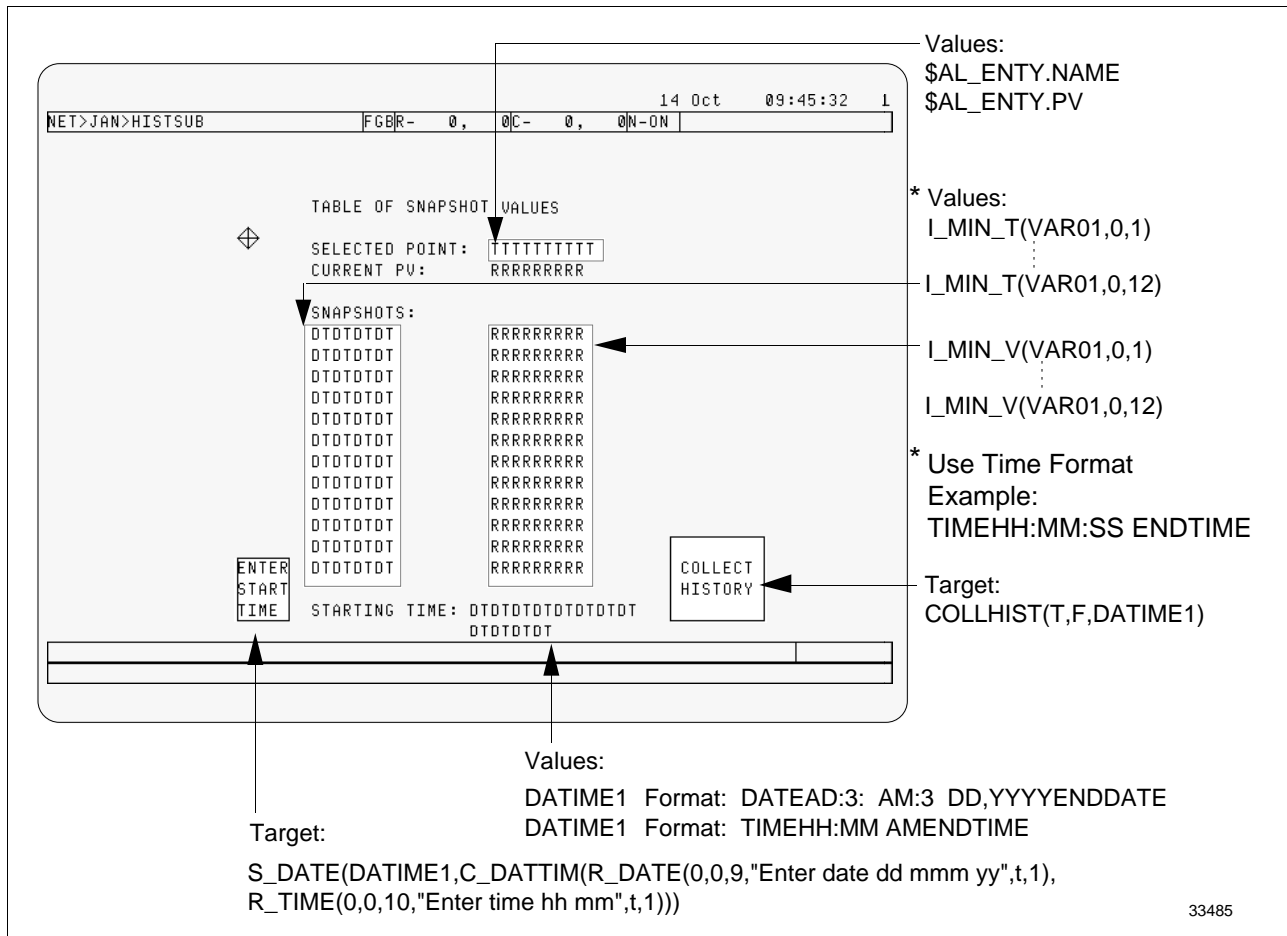
In this lab exercise, you are asked to assign a 3-digit “student number” to any database items you build. This convention is not necessary unless you are performing the exercise at a Honeywell training facility or if your course manager has instructed you to follow the convention.

Build History Collection Schematic

Build history subpicture Perform these steps to build a subpicture that collects 1-minute snapshots for a selected point, based on current time or an operator-entered starting time/date. The subpicture should look similar to Figure 2.

Step	Action
1	Start a new subpicture named HSUB###. where ### is your student number.
2	Add the text, values, and targets shown in Figure 2. Set the origin of the subpicture.
3	Write (save) the subpicture.

Figure 2 History Collection Subpicture



ATTENTION

ATTENTION—If using current time as the starting time, the most recent 1-minute value may not be available in the History Module.

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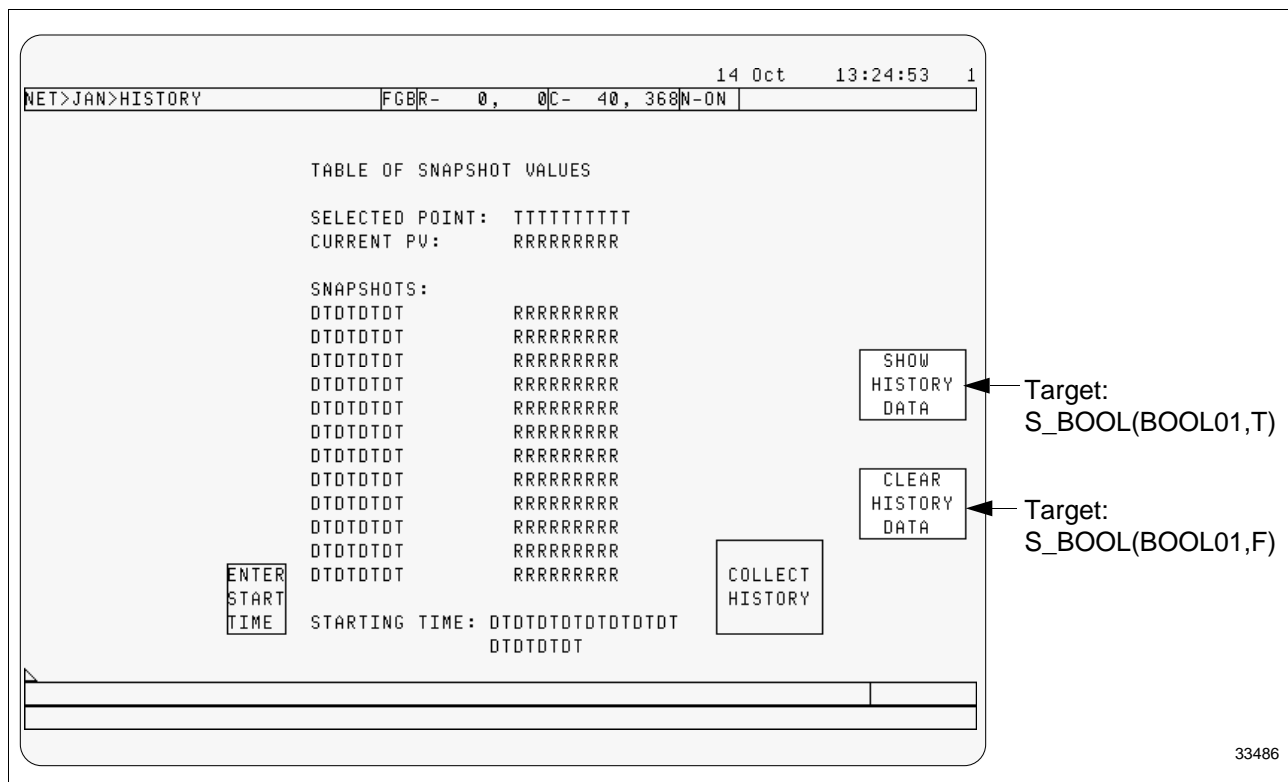
Build History Collection Schematic, Continued

Build schematic

Perform these steps to build a schematic that calls in your subpicture.

Step	Action
1	Start a new display named HIST###.
2	Add a variant to call the history subpicture you build earlier: <code>IF BOOL01=T THEN SUB HSUB###</code>
3	Add the targets shown in Figure 3.
4	Define the initial action of the schematic to store the point contained in \$AL_ENTY to a variable DDB accessible to the history collectors. <code>DEF INIT</code> <code>S_VAR(VAR01,C_VAR(G_ENT(\$AL_ENTY),0,.PV,-9999))</code>
5	Compile the schematic, then copy it to the PICT directory.

Figure 3 History Schematic Targets



Continued on next page

Build History Collection Schematic, Continued

Test schematic

Perform these steps to test your schematic.

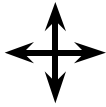
Step	Action
1	Locate a point that has HM history available.
2	Select the point on the Alarm Summary or an Organizational Summary display.
3	Call up your schematic HIST### and select the target to display the snapshot values. RESULT: The name and PV of the selected point appears along with the subpicture.
4	Select the target to start the history collection. RESULT: The time values and snapshot data appear.
5	Enter a new start time, then select the target to retrieve history again, based on the new reference time.

Optional exercise

Digital values are stored in history as real values of either 0.00 or 1.00. You can convert the real values to the digital point's state names for a more user-friendly indication. Perform the following steps to display a digital value's actual state name in your schematic.

Step	Action
1	Add this variant to your schematic HIST###: <pre>IF MINUTE_V(nnnnnnnn.PV,0,3)=1.0 THEN "ON" ELSE "OFF"</pre> Where <code>nnnnnnnn</code> is the name of a digital point with history available, such as <code>AGI24###</code> . This point's 0 state is OFF and its 1 state is ON. The state of this digital input point can be changed by using its digital composite point <code>AG24###</code> . Next to this variant, add the time value associated with this PV value: <pre>MINUTE_T (nnnnnnnn.PV,0,3)</pre>
2	Compile the schematic and copy it to an Area directory.
3	Call up your schematic and select the target to display history.
4	Select the target to start the history retrieval. RESULTS: ON or OFF will be displayed for the digital point value.

Directions



DIRECTIONS—This is the end of the lab exercise. Discuss questions concerning the study material or lab activities with a colleague or your course manager.

If you are satisfied that you have achieved the objective of the course module, continue with the Student Proficiency Evaluation.

Student Proficiency Evaluation

Criterion Test

Part 1—completion of lab exercise

Completion of the lab exercise satisfies part of the test requirements for this course module.

Be prepared to describe your Picture Editor source and object files to your course manager:

HSUB###.DS

HIST###.DS and .DO

Part 2—test questions

Be prepared to answer the the following questions and discuss them with your course manager.

1. Can you use the FFL collectors that existed before R500 in custom schematic displays you build in R500?

2. What is the advantage of using the indirect versions of the history collectors?

3. What is the format of the COLLHIST actor if you want the operator to enter the start time?

COLLHIST(_____)

Self-Evaluation

Part 1—completion of lab exercise

Completion of the lab exercise satisfies part of the test requirements for this course module.

Be prepared to describe your Picture Editor source and object files to your course manager:

HSUB###.DS

A “history collection” subpicture that collects 1-minute snapshots for a point selected from the Alarm Summary display or one of the Organization Summary displays. The history is based on current time or an operator-entered starting time/date. The subpicture contains a target used to start the history collection.

HIST###.DS and .DO

Custom Schematic display containing targets and a variant to display and remove the “history collection” subpicture. The INITIAL action of the display stores the entity name contained in \$AL_ENTY and the .PV parameter to a DDB variable location.

Part 2—test questions

Be prepared to answer the the following questions and discuss them with your course manager.

1. Can you use the FFL collectors that existed before R500 in custom schematic displays you build in R500?

YES, all previous FFL collectors can be used in R500 schematics (all the way back to R300). And all of the previous collectors have indirect versions in R500.

2. What is the advantage of using the indirect versions of the history collectors?

They allow the operator to enter or select the point and/or parameter, instead of defining it at display build-time.

3. What is the format of the COLLHIST actor if you want the operator to enter the start time:

`COLLHIST (T , F , DATIMEn)`

Directions



DIRECTIONS—This is the end of this course module.

Use your course map to

- Get your course manager to sign off this course module.
- Choose your next eligible course module.

If you have a question

- Ask your course manager.
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