

Lesson 3

4410S

Notices and Trademarks

**Copyright 1999 by Honeywell Inc.
Release 5.0 September 28, 1999**

While this information is presented in good faith and believed to be accurate, Honeywell disclaims the implied warranties of merchantability and fitness for a particular purpose and makes no express warranties except as may be stated in its written agreement with and for its customers.

In no event is Honeywell liable to anyone for any indirect, special or consequential damages. The information and specifications in this document are subject to change without notice.

Honeywell, and **TotalPlant** are U.S. registered trademarks.

Other brand or product names are trademarks of their respective owners.

Honeywell Inc.
Industrial Automation and Control
Automation College
2820 West Kelton Lane
Phoenix, AZ 85053-3028
1-800 852-3211

Lesson 3 - Table of Contents

INTRODUCTION	1
LESSON OVERVIEW	1
Reports	2
EVENT INITIATED	2
Dynamic Indirection	10
EFFECTS	10
CName Revision	12
LIBRARY ERROR	12
CDS Revision Mismatch	14
AM Performance	15
SCHEDULING	15
PERFORMANCE PARAMETERS	18
PERFMENU	29
AM Utility Tools	38
DOCUMENTATION TOOL	39
FIND NAMES	43

Introduction

LESSON OVERVIEW

Lesson Objectives

Upon completion of this lesson, you will have an understanding of the following:

- Implementation of Event Initiated report
 - the effects of Dynamic Indirection
 - CNAME Rev. error and implementing recovery procedure
 - CDS Rev. Mismatch error and implementing recovery procedure
 - PERFMENU in reviewing AM performance
 - Documentation Tools and Findnames Utility tools
-

Lesson Outline

Introduction

LESSON OVERVIEW

Reports

EVENT INITIATED

Dynamic Indirection

EFFECTS

CName Revision

LIBRARY ERROR

CDS Revision Mismatch

AM Performance

SCHEDULING

PERFORMANCE PARAMETERS

PERFMENU

AM Utility Tools

DOCUMENTATION TOOL

FIND NAMES

Reports

EVENT INITIATED

- There are two classes of Event Initiated Reports :
 - Area Reports; Logs, reports, journals, and trends configured in the Area Database
 - Event History Reports.

- Area reports use the format:

"\$OUT_RPT <report name> <options>"

Options include \$AREA (#) , \$CONS (#), \$CONF parname(x).

Example:

Package

```
Custom
Parameter status : number Array (1..5)
End Custom

Block Report (Point Report, at Backgrnd)
Set status(1) = 0.0

Send: "$Out_rpt FFL1 $Conf status(1)"

    -- quote marks are required
    -- status return 1.0 means report complete, no
error
    -- status return 2.0 means report did not complete
End Report
```

End Package

Reports

EVENT INITIATED

- Event History reports use the format:

```
"$OUT_EHR <Rpt> <Item> <date & time> <options>"
```

Where Rpt is:

Alm = process alarms & Item = Unt, Mod, or Pnt

Msg = operator messages & Item = Unt, Mod, or Pnt

Chg = process changes & Item = Unt, Mod, or Pnt

Soe = sequence of events & Item = Unt

Sts = system status & Item = Hwy, Abx, Nod, or All

Mnt = system maintenance & Item = Hbx, Hwy, Abx, Nod, or All

Err = system errors & Item = Hbx Hwy, Abx, Nod, or All

*Refer to Engineer's Reference Manual, Section 30.1.3 for **Item** details*

Where <date & time> is:

\$Atime *date_time date_time* defining absolute start /stop date time.

\$Rmins *tttt* defining number of minutes relative message time to be included in report.

\$Rsecs *tttt* defining number seconds relative to message time to be included in report.

\$lmins *date_time tttt* defining report interval time as a start time/date, followed by an interval time in minutes.

\$lsecs *date_time tttt* defining report interval time as a start time/date, followed by an interval time in seconds.

Where Options include \$AREA (#) , \$CONS (#), \$CONF parname(x) and \$PTR (#).

Reports

EVENT INITIATED

Example:

Block Report (Point Report; at Backgrnd)

```
Send: " $Out_Ehr Alm Pnt A100 ",  
&      " $Atime 25 Feb 93 09:00 25 Feb 93 09:15 $Ptr 1 "
```

-- Alarm report for point A100 for Feb 25 between 9:00 - 9:15
will be sent to printer #1.

OR

```
Send:  " $Out_Ehr Chg Unt 39 40 $Rmins 30 $Cons 5 $Ptr 1 "
```

-- A Process Change report for Units 39 and 40 will be sent
to printer #1 on Console #5. The report will contain the
process changes for the 30 minutes prior to message
time.

note: The message must be enclosed in Quotes as shown above.

Refer to Engineer's Reference Manual, Section 30.1.3 titled Event
History Reports for more details

Reports

EVENT INITIATED

Triggering Doc Tool Query

There are two methods for automatically triggering and canceling a predefined Doc Tool query.

- CL send statement
- Command processor command

Reports

EVENT INITIATED

CL Send Statement

There are three new keywords added to R610 to invoke a pre-defined query from CL using a specially formatted send message. They are used as follows:

SEND: "\$QFILE NODE NUMBER DESCRIPTOR PATHNAME XX"

SEND: "\$QPRINT NODE NUMBER DESCRIPTOR \$PN XX"

SEND: "\$QCANCEL NODENUMBER YY"

Where:

\$QFILE - for specifying a query whose result should be output to a file.

\$QPRINT - for specifying a query whose results should be output to a printer.

NODE NUMBER - is a required field, and specifies the LCN US node, which is to process the request.

DESCRIPTOR - is a required field, and specifies the name of the pre-defined query (max 16 characters).

PATHNAME - is a required field, and specifies the path to the file to which the query results should be output.

\$PN - is a required field, and specifies the printer ID.

XX AND YY are optional fields which can take the values given below:

- XX = \$BYPASS/\$SORT/\$BYSORT/\$SORTF/\$BYSORTF/\$NSORT/\$BYNSORT
- YY = \$BYPASS

If specified, they achieve the following:

\$BYPASS: Allows the user to specify that the Cl Send message itself is not to be output to the Real Time Journal nor put into the operator message summary display (the message still goes into the HM event history).

\$SORT: Sorts the query result by the entity name.

\$BYSORT: Facilitates both \$SORT and \$BYPASS operations.

\$SORTF: Sorts the query result by the user specified first field.

\$BYSORTF: Facilitates both \$SORTF and \$BYPASS operations.

\$NSORT: Explicitly does not sort the query.

\$PYNSORT: Facilitates both \$NSORT and \$BYPASS operations.

Reports

EVENT INITIATED

AM CL Send Message Example:

SEND: "\$QFILE 20 NMPOINTS NET>TEMP>NMPOINTS.XX \$BYPASS"

Where:

20 is the US node number where the query is to run.

NMPOINTS is the descriptor of the pre-built query.

Reports

EVENT INITIATED

Command Processor Commands

There are three new commands added to R610 to invoke a pre-defined query from the command processor. They are used as follows:

QFILE DESCRIPTOR PATHNAME XX

QPRINT DESCRIPTOR \$PN XX

QCANCEL

Where:

QFILE is the keyword for specifying a query output result to a file.

QPRINT is the keyword for specifying a query output result to a printer.

QCANCEL is the keyword for canceling the running query.

DESCRIPTOR is a required field and specifies the name of the pre-defined query.

PATHNAME is a required field and specifies the pathname to the file.

\$PN is a required field and specifies the printer ID.

XX is an optional field, which can take the values given below:

XX = -SOR/-SORTF/-NSORT

If specifies, they achieve the following:

- SORT: Sorts the query result by the entity name.

- SORTF: Sorts the query result by the user specified first field.

- NSORT: Explicitly does not sort the query result.

Reports

EVENT INITIATED

How to Add a Unit to AM

Previous to R600, to add a unit to an AM, you had to delete the AM node and then add the node back with the desired changes. With R600 and later, you can add or delete units and change the startup mode without first deleting the node and then re-adding the AM node. This is done by first selecting the modify node target and then making the desired changes. After the desired changes have been made on-line and installed, the node and other affected nodes must be reloaded.

Note: If more than 15 adjacent units are configured with only one point built in each unit, the AM can "HANG" while trying to display points. The best solution is to have more than one point per unit.

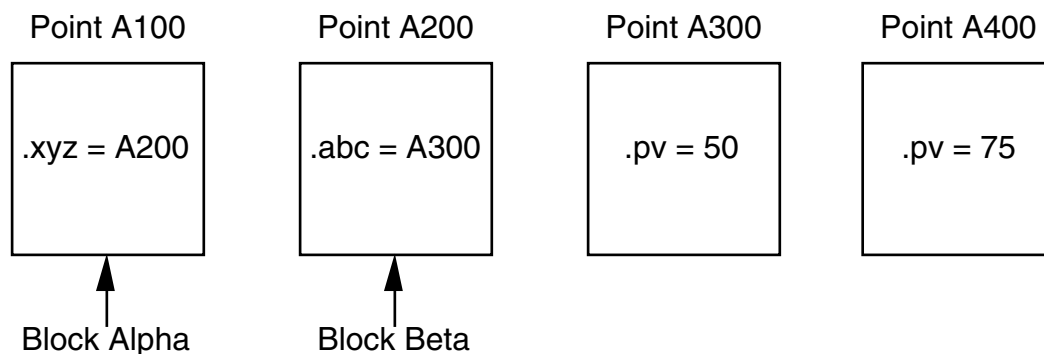
Dynamic Indirection

EFFECTS

- Dynamic Indirection is the modifying of a point_id value in a Custom Parameter either manually from a Point Detail Display / Graphics or automatically via a CL Program using a Move_Parameter subroutine.
- A change to a point_id type Custom Parameter forces a relink of all CL with reference to that parameter on the Bound Data Point where the Custom Parameter resides.

If another point upstream references the point_id type Parameter which has been changed, it does not recognize the change and therefore will not relink its CL. This would cause the upstream point to continue to reference the old value of the changed parameter.

Example:



If the value of A200.abc is modified from A300 to A400, and CL Block Beta on point A200 had reference to "abc.pv", the referenced value would change from the pv of A300 to the pv of A400 because of the CL Block Beta relink on A200.

However, if CL Block Alpha had reference to "xyz.abc.pv" it would still reference the pv of A300 for the value 50. A dynamic change on A100.xyz is required to force a relink of Block Alpha on point A100 to recognize the value change on A200.abc.

Dynamic Indirection

EFFECTS

Example of programmed Dynamic Indirection:

Package

Custom

Parameter xyz, compar : \$Reg_Ctl

End Custom

Block Alpha (Point A100; at General)

Local status: Clerrsts

If not Equal_Point_Id (Compar, xyz.abc) then
& call Move_Parameter (Compar, xyz.abc,
status)

Call Allow_Bad (Pvcalc,xyz.abc.Pv)

-- rest of program

End Alpha

End Package

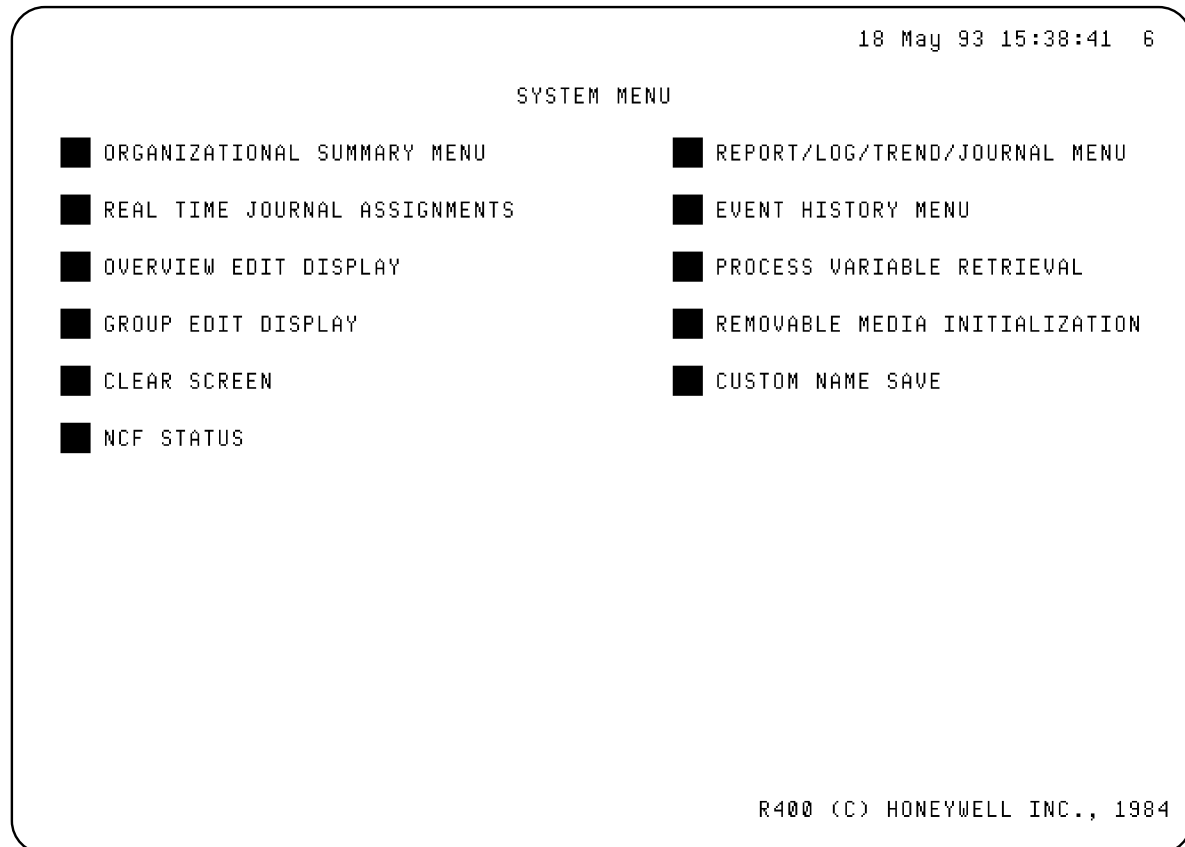
CName Revision

LIBRARY ERROR

- When a Custom Data Segment is compiled the first time with an Update Library (-UL) option, the name of the CDS and all new parameters are added to a library file: Segments.sp and Parametr.sp respectively.
- These libraries are normally maintained on directory &ASY on the History Module or a Bernoulli cartridge. A copy of these files are also maintained on all Universal Stations.
- A CName Rev. error occurs when a Universal Stations is reloaded and the copy of the Segments.sp and/or the Parametr.sp file it receives from the storage media is a different version than the first Universal Station previously loaded.
- This occurs when a History Module fails and is reloaded from a backup Bernoulli whose Parametr.sp and Segments.sp files have not been kept current.
- When a CName Rev error occurs on a Universal Station reload, first shut the station down. Then perform a Custom Name Save from a known good Universal Station. This serves to update the History module with the most current .sp files. Now the Universal Station that was initialized may be reloaded.
- Custom Name Save function is found under the System Menu.

CName Revision

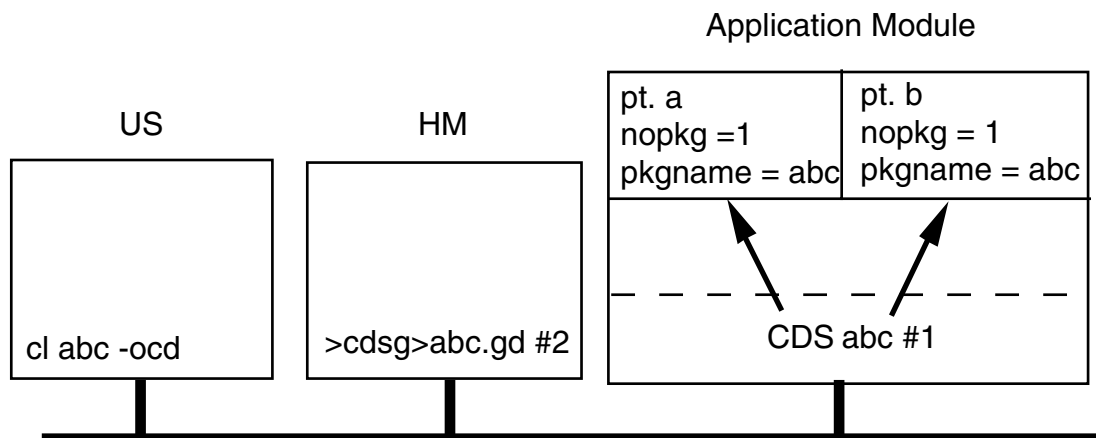
LIBRARY ERROR



CDS Revision Mismatch

- This error occurs when the object code (.gd) in the History Module directory CDSG has a different time stamp than a copy of the same CDS, currently in use, in the Application Module
- The CDS object file is time stamped the first time the CDS is compiled with a -UL directive. A recompilation of the CDS with an -OCD directive restamps the time on the object file in directory CDSG, even though nothing was changed in the CDS.
- Once a CDS object is in use (attached to points) in the AM, the AM will not allow another CDS with the same name and different time stamp to be used.
- Should this error occur, you must make all points using the CDS inactive, call each one into the PED, set parameter NOPKG = 0, then load the point. When CDS has been detached from all points, the AM will accept the modified CDS.

Example:



AM Performance

SCHEDULING

- AM points may be scheduled at various intervals from one second to once every 24 hours. Care should be taken to not schedule the points any faster than necessary.
- Once schedule is selected, the choice of execution cycle must be made. The choices are No, Before, After, or Cycle. The scheduling and cycle selection are made in the PED.

Example:

03 Mar 93 15:39:31 2

PED >>>>>> POINT:AM100 UNIT:39 PAGE 03 OF 05

AM-SCHEDULING DISPLAY

POINT ASSIGNED TO IPP (\$IPPASN) ☒ OFF

POINT EXECUTION PERIOD (PERIOD)

BEFORE/AFTER/CYCLE OPTION (BEFAFT)

F1=PED F3= F5=OVERWRITE F7=RECON F9 =WLK BACK F11=

F2=RECALL DISP F4= F6= F8=PED STATUS F10=WRITE F12=LOAD

AM Performance

Scheduling

- Selection of:

NO causes the AM to select the most appropriate cycle to balance the schedule loading for the specific unit the point is assigned to.

BEFORE is used to select a cycle just before another point which should execute after the point being built. Both points should ideally be on the same schedule or at least on the same multiple.

AFTER is the same as the BEFORE selection except that the point being built is scheduled after another designated point. Again, they should be on the same schedule or same multiple.

CYCLE allows the user to specify the desired cycle. This feature is desirable when points are heavily loaded with CL programs or if the Current Value Buffer is overloaded on some cycles.

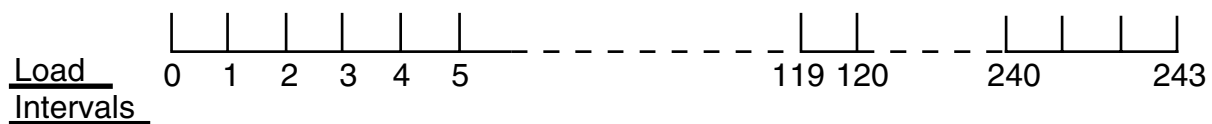
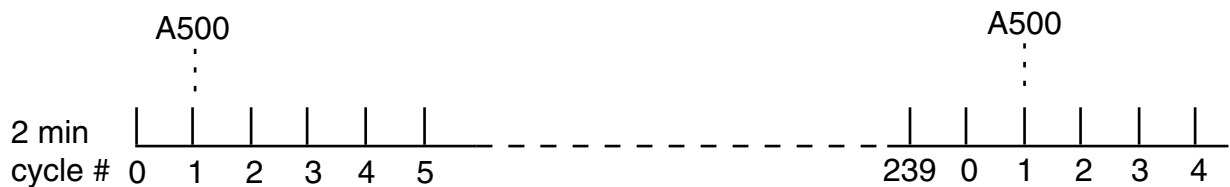
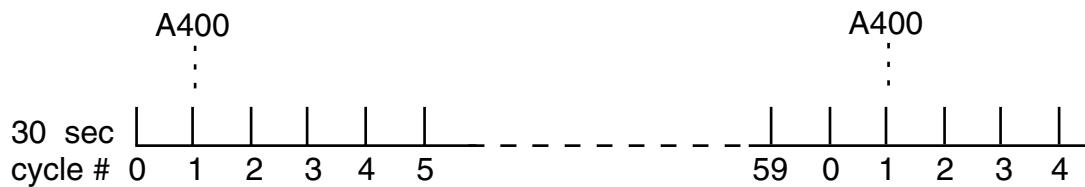
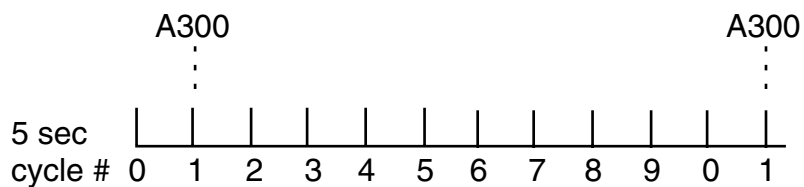
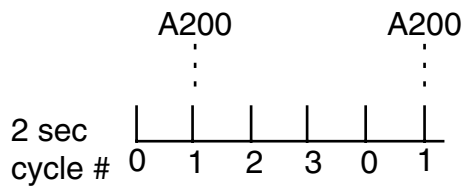
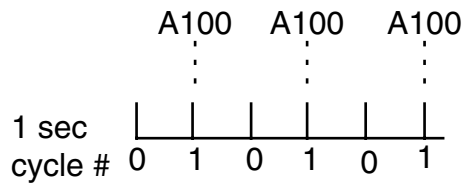
The selections NO, BEFORE, or AFTER do not take into account CL loading. It is very possible you may overload a cycle due to the number of CL programs required to execute.

Points with CL programs scheduled on the same cycle also may impact the size of the Current Value Buffer (CVB).depending on the prefetch/poststore requirements.

AM Performance

Scheduling

Period



AM Performance

PERFORMANCE PARAMETERS

- All system nodes on the LCN have Processor Status Data Point (PSDP) that contains several parameters to reflect important status and memory-use values. In addition, PSDPs in the Application Module have several parameters that reflect performance.
- The PSDP name is \$PRSTSnn where nn = node number. The structure to select one of these performance parameters would be:

\$PRSTSnn. <parameter>

Example:

```
$Prsts20.Cpufree    = CPU freetime in percent
$Prsts20.Idlavgc    = Average idle time (%) in current hour
$Prsts20.Cdsavgc    = CDS parameter access per second in
                    current hour
$Prsts20.Pfpsovrc   = Total prefetch/poststore overrun count
                    in current hour
$Prsts20.Pfpsovrp   = Total prefetch/poststore overrun count
                    in previous hour
$Prsts20.Amovrthr   = Alarm trip-point count for fast
                    processor
                    (# of cycles)
```

Note: Refer to Engineer's Reference Manual Section 22 for complete list of AM performance parameters.

AM Performance

PERFORMANCE PARAMETERS

- \$Prsts20.Amschdmp(39) = the input parameter to specify a pathname for a schedule dump. The number in () is the unit index number.

Example:

SCHEDULE DUMP

06 Dec 93 09:10:01 3											
Source File : NET>S304>DUMP.XX											
LINE 1											
SCHEDULE DATA BASE FOR UNIT039											
NOTES:											
* indicates that the point is assigned to the IPP											
- indicates that the point is inactive											
FAST	IPP	IPP	FAST	IPP	IPP	FAST	IPP	IPP	FAST	IPP	IPP
0	15	0	1	15	0	2	17	0	3	15	0
4	15	0	5	15	0	6	17	0	7	16	0
8	15	0	9	15	0	10	15	0	11	15	0
12	17	0	13	15	0	14	15	0	15	15	0
16	17	0	17	16	0	18	15	0	19	15	0
20	15	0	21	15	0	22	17	0	23	15	0
24	15	0	25	15	0	26	17	0	27	16	0
28	15	0	29	15	0	30	15	0	31	15	0
32	17	0	33	15	0	34	15	0	35	15	0
36	17	0	37	16	0	38	15	0	39	15	0
40	15	0	41	15	0	42	17	0	43	15	0
44	15	0	45	15	0	46	17	0	47	16	0
48	15	0	49	15	0	50	15	0	51	15	0
52	17	0	53	15	0	54	15	0	55	15	0
F1	F2	F3	F4	F5	F6	F7	F8				
QUIT	BLOCK	JUMP	MACRO	EDIT	SET	FILE	SBUFFER				

AM Performance

PERFORMANCE PARAMETERS

SCHEDULE DUMP (cont)

06 Dec 93 09:12:33 3

Source File : NET>S304>DUMP.XX

LINE 67											
228	15	0	229	15	0	230	15	0	231	15	0
232	17	0	233	15	0	234	15	0	235	15	0
236	17	0	237	16	0	238	15	0	239	15	0
MINUTE	SPP	IPP	MINUTE	SPP	IPP	MINUTE	SPP	IPP	MINUTE	SPP	IPP
0	1	0	1	1	0	2	1	0	3	1	0
4	1	0	5	1	0	6	1	0	7	1	0
8	1	0	9	1	0	10	1	0	11	1	0
12	1	0	13	1	0	14	1	0	15	1	0
16	1	0	17	1	0	18	1	0	19	1	0
20	1	0	21	1	0	22	1	0	23	1	0
24	1	0	25	1	0	26	1	0	27	1	0
28	1	0	29	1	0	30	1	0	31	1	0
32	1	0	33	1	0	34	1	0	35	1	0
36	1	0	37	1	0	38	1	0	39	1	0
40	1	0	41	1	0	42	1	0	43	1	0
44	1	0	45	1	0	46	1	0	47	1	0
48	1	0	49	1	0	50	1	0	51	1	0
52	1	0	53	1	0	54	1	0	55	1	0
56	1	0	57	1	0	58	1	0	59	1	0
HOUR	SPP	IPP	HOUR	SPP	IPP	HOUR	SPP	IPP	HOUR	SPP	IPP
0	0	0	1	0	0	2	0	0	3	0	0
F1	F2	F3	F4	F5	F6	F7	F8				
QUIT	BLOCK	JUMP	MACRO	EDIT	SET	FILE	SBUFFER				

AM Performance

PERFORMANCE PARAMETERS

SCHEDULE DUMP (cont)

06 Dec 93 09:14:29 3

Source File : NET>E304>DUMP.XX

LINE 115

16	0	0	:	17	0	0	:	18	0	0	:	19	0	0
20	0	0	:	21	0	0	:	22	0	0	:	23	0	0
1SEC THREADS														
0	TC71308													
1	PTRTM307 - PTRTM309													
2SEC THREADS														
0	FC70301	FC70302	TIS2302											
	TI303	FC70304	T0304											
	TIS2304	FC70306	FC70307											
	TIS2307	TI308												
1	TIS301	TIS2301	TIS302											
	TI2302	T0303	TIS304											
	TIS305	TI2304	TIS306											
	TIS2306	TI3307	TI2307											
	T0308													
2	TI301	TI302	FC70303											
	TIS2303	FC70305	TI305											
	TIS2305	TI306	TI307											
	FC70308	TI32308												
3	T0301	TI2301	T0302											
	TIS303	TI2303	TI304											
F1	F2	F3	F4	F5	F6	F7	F8							
QUIT	BLOCK	JUMP	MACRO	EDIT	SET	FILE	SBUFFER							

AM Performance

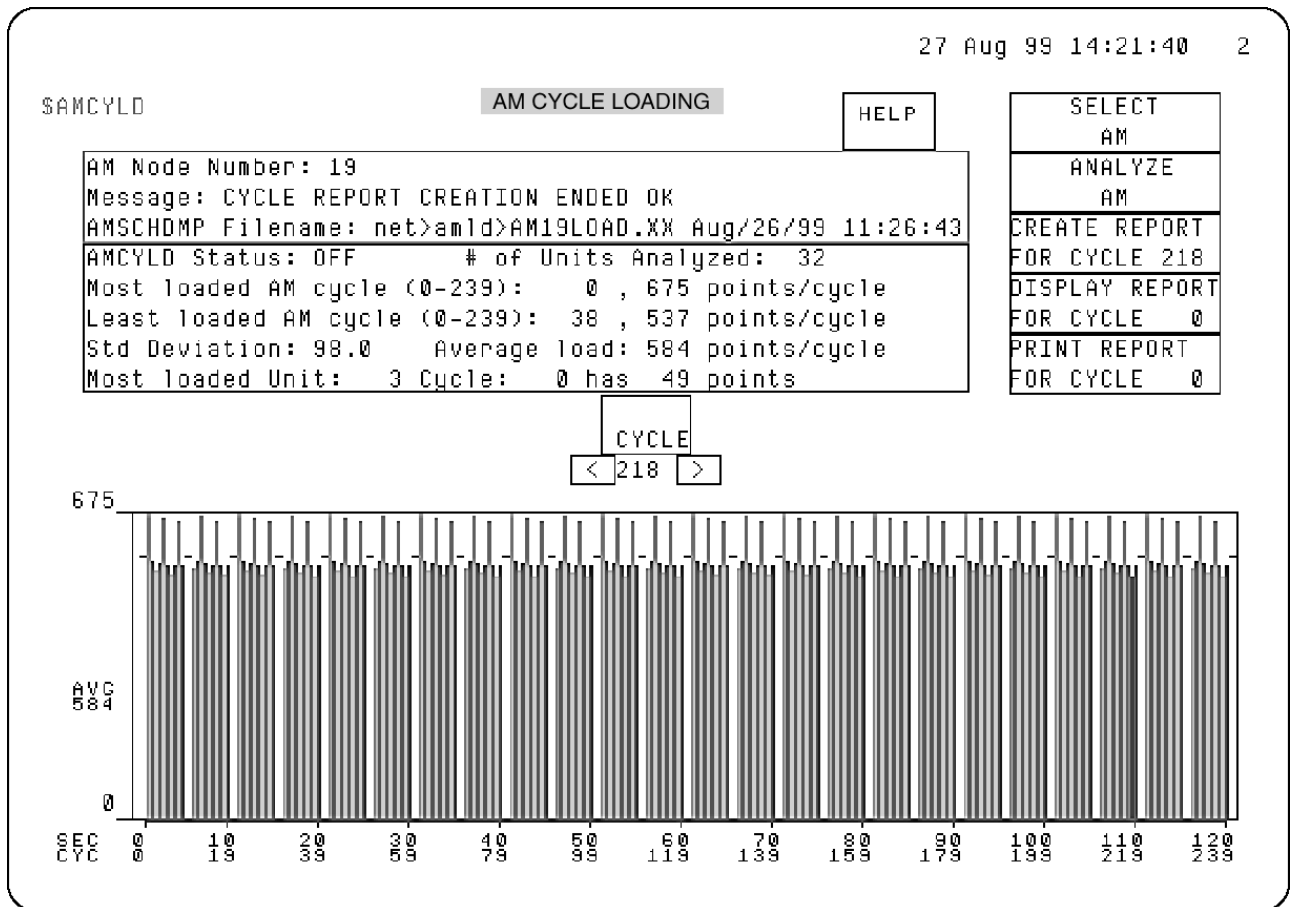
PERFORMANCE PARAMETERS

AM Load Balance Tool

- This application analyzes AM points that are scheduled for fast point processor only.
- Analyzes the information and provides a composite set of results for all units in the AM.
- Provides a graphical representation of point loading per cycle on a specified AM.
- The graphical information is displayed in the schematic \$AMCYLD.
- It generates two text file reports:
 - AMNNLIST.XX (NN is the AM node number)
The file contains a list of points on a specific cycle across all units. It defaults to the most loaded cycle, but can be created for any cycle from schematic \$AMCYLD.
 - AMNNLOAD.XX (XX is the AM node number)
Which creates and analyzes an AM schedule DUM file. The information within the file is displayed by cycle, unit by unit.
 - The AM load balance tool is located in directory TLK2 of the &Z3 of the R600. Installation instructions are included as a text file (AMCYHLP.XI) in the TLK2 directory.
 - An example of the schematic \$AMCYLD is shown on the following page.

AM Performance

Below is an example of the AM Cycle Loading screen:



35356

AM Performance

PERFORMANCE PARAMETERS

\$AMCYLD TARGETS

HELP	Selecting the HELP target will bring up the HELP schematic. An example of the HELP schematic is shown on the following page.
SELECT AM	When the display is invoked for the first time, only this target will be active.
ANALYZE AM	After a valid AM node number has been entered, this target will become active.
CREATE REPORT FOR CYCLE XXX	After the schedule dump file has been created, this target will become active.
DISPLAY REPORT FOR CYCLE XXX	Can be used to view the report file (AMNNLIST.XX)
PRINT REPORT FOR CYCLE XXX	Can be used to print the report file (AMNNLIST.XX)
CYCLE	User can select a specific cycle or can choose one by one using the left and right targets.
MESSAGE	Provides the report status or a list of error messages that might be produced by the AM Load Balance application.
AMSCHDMP FILENAME	Displays the AM schedule dump file time stamp.

AM Performance

Below is an example of the AM Cycle Loading Help screen:

```
28 Sep 99 10:01:34 2
$AMCYHLP          AM CYCLE LOADING HELP          RETURN
SELECT AM - Select this target to choose a valid AM node.
ANALYZE AM - Select this target to create and analyze the AM Schedule
             Dumper file. A Cycle Loading Graph will then be created.
             The most heavily loaded cycle will be blinking.
CREATE REPORT - Select this target to list the points on a specific cycle. The
FOR CYCLE XXX default report will be the points on the most loaded cycle.
               The value for cycle can be modified by selecting the CYCLE
               target.
DISPLAY REPORT - Select this target to display the list of points on the
FOR CYCLE XXX specified cycle. This replaces the current schematic and
               requires PRIOR button to return.
PRINT REPORT - Select this target to print the list of points on the
FOR CYCLE XXX specified cycle. User will be prompted for printer number.
CYCLE - Select this target to enter a specific cycle (0-239).
< > - Select these targets to change cycle value by -1(<) or +1(>).
```

35357

AM Performance

Below is an example of AMNNLIST.XX

28 Sep 99 09:42:51 2

USER PATH : NET>TEST>

PR NET>AMLD>AM19LIST.XX

AM19LIST.XX

09/28/99 09:41:54

AM CYCLE LOADING POINT LIST

AM NODE 19 , CYCLE 38

NO. POINT	STATUS	PERIOD	CYCLE
1 FICDY220		5SEC	8
2 FICDY521		5SEC	8
3 FICDY419		5SEC	8
4 FIC4103	INACTIVE	1SEC	0
5 FIC4105	INACTIVE	1SEC	0
6 FIC4107	INACTIVE	1SEC	0
7 FIC4123	INACTIVE	1SEC	0
8 FIC4125	INACTIVE	1SEC	0
9 FIC4127	INACTIVE	1SEC	0
10 FIC4141	INACTIVE	1SEC	0
11 FIC4143	INACTIVE	1SEC	0
12 FIC4147	INACTIVE	1SEC	0
13 FIC4183	INACTIVE	1SEC	0
14 FIC4185	INACTIVE	1SEC	0
15 FIC4187	INACTIVE	1SEC	0

3536

35364

AM Performance

PERFORMANCE PARAMETERS

AM Load Balance Tool Error Handling

Error Message	Meaning	Remedy
ERR1: Reading file directory/timestamp	Schedule dump directory has been deleted, or HM has been powered Off or failed.	Recreate the AMLD and then create a new schedule dump file. If HM problem, restart HM
ERR2: Error opening file	HM has been powered Off or has failed.	Restart HM.
ERR3: Error reading file record	HM has been powered Off or has failed.	Restart HM.
ERR4: Error reading field-cycle number	Data in the schedule dump file has been deleted or corrupted.	Create a new schedule dump file.
ERR5: Error reading field-cycle data	Data in the schedule dump file has been deleted or corrupted.	Select the Analyze AM Target and create a new file.
AM schedule dump file does not exist	The schedule dump file has not yet been created for AM.	Create a new schedule dump file.
AM schedule dump file open-Please close	The schedule dump file is in use by another station.	Close the schedule dump file and try your operation again.
Node XX is not an AM	The node entered after selecting the Select AM Target is not the node number of an AM.	Select a valid AM node number at the select AM target.
Node YY is not on net	The node entered after selecting the Select AM Target is not online.	Load the desired AM node, or select a valid AM node number.

AM Performance

PERFORMANCE PARAMETERS

- The Schedule dump is executed using the DATACHNG selection on the PERFMENU. It provides for custom input ports and value ports to see PSDP parameters not available on other utility schematics.

Example:

ENTER POINT.PARAMETER 19 May 93 08:48:08 6

DATACHNG - READ AND WRITE SYSTEM VARIABLE, DATA SAVED IN GLOBAL DATA FOR RECALL
PRIOR DISPLAY PERFMENU 'FAST' BUTTON IMPLEMENTED R400
NOTE THAT SOME COMBINATIONS OF PARAMETER VALUES MAY NOT FIT IN THE ALLOWED SPACE
ALL PARAMETER CHANGES FROM THIS DISPLAY ARE UNDER NORMAL KEYLOCK RESTRICTIONS
CLEAR TOUCH BOX TO ENTER POINT.PARAMETER -OR- TO ENTER A NEW PARAMETER VALUE
LINE

\$PRSTS19.AMSCHDMP(39)	NET>S312>DUMP.XX
\$PRSTS19.AMOVRTHR	60
\$PRSTS19.AMOVRABT	-1
\$PRSTS19.OVERRUNS	0.0
\$PRSTS19.PFPSOVRC	0
\$. ()	

AM Performance

PERFMENU

- Performance parameters may be viewed via custom built schematics or through Honeywell's utility schematic. The utility schematic is called PERFMENU. Perfmenu is actually a series of schematics allowing the user to choose the specific area of interest.

Example:

06 Dec 93 09:49:22 3

PERFMENU - MENU OF PERFORMANCE AND LOADING DISPLAYS

SELECT
FOR PAGE 1

SELECT
FOR PAGE 2

R410

DATACHNG	-CONVENIENT MECHANISM TO ALL INFORMATION OF POINT.PARAM	CHKPTIME	-CONVENIENT MECHANISM TO DISPLAY AND CHECKPOINT INFORMATION
NODEPERF	-DISPLAYS SUMMARY OF ANY NODES INCLUDING PSOP DATA SPECIFIC INFORMATION	CLOCKMODE	-ACCESS TO NODE CLOCK STATUS INCLUDING CLOCKS SYNC. CLOCK BOARD BEGINNING WITH R320
QUIKTRND	-CONVENIENT MECHANISM FOR TRENDING POINT.PARAM DATA FROM OPERATOR KEYBRD	AMDETAIL	-GENERIC ACCESS TO MANY OF THE AM'S PARAMETERS CURRENT, AND PREVIOUS HOUR
\$LNMENU	-CONVENIENT MECHANISM OF VALUES FROM DIA1 MEDIA	AMTREND	-GENERIC TREND OF 16 OF THE AM'S PARAMETERS FROM 96 HOURS REAL TIME ONLY
CPUCHKR	-SHOWS ALL SYSTEM NODES' CPU'S FROM CHECK AND ALL VALUES USED FOR COMPARISON TEST	NGDETAIL	-GENERIC ACCESS TO MANY OF THE NG'S PARAMETERS FOR DETERMINATIONS
PARCHKR	-SHOWS ALL SYSTEM NODES' PARAS FROM CHECK AND ALL VALUES USED FOR COMPARISON TEST	NGTREND	-GENERIC TREND OF 16 OF THE NG'S PARAMETERS FROM 96 HOURS, DRT ONLY
HEAPCHKR	-SHOWS ALL SYSTEM NODES' HEAP FROM CHECK AND ALL VALUES USED FOR COMPARISON TEST	HMDetail	-GENERIC ACCESS TO MANY OF THE HMD'S PARAMETERS FOR DETERMINATIONS
HEAPMIN	-SHOWS ALL SYSTEM NODES' HEAP FROM CHECK AND ALL VALUES USED FOR COMPARISON TEST	HMTREND	-GENERIC TREND OF 16 OF THE HMD'S PARAMETERS FROM 96 HOURS, DRT ONLY

AM Performance

PERFMENU

06 Dec 93 09:17:15 3

PERFMENU - MENU OF PERFORMANCE AND LOADING DISPLAYS

SELECT
FOR PAGE 1

SELECT
FOR PAGE 2

R410

SLTCONFIG	-CONVENIENT MECHANISM TO ALLOW VERIFYING THE HG BOX/SLOT CONFIG AGAINST ACTUAL BOX HARDWARE	DRVSTS	-PROVIDES A GOOD OVERVIEW OF HM DRIVE EXISTENCE & VOLUME CONDITION AND STATUS
UCNCOMM	-CONVENIENT MECHANISM TO DISPLAY UCN COMM RELATED DATA AND PROVIDES STATISTICS RESET COMMAND	HGTREND	-GENERIC TREND OF CRITICAL HG PSDP PARAMETERS TO GIVE LOAD AND PERFORMANCE INFORMATION REAL TIME ONLY
UCNEVENT	-CONVENIENT MECHANISM TO DISPLAY UCN EVENT & MESSAGE RELATED DATA AND PROVIDES STATISTICS RESET COMMAND	CBREV	-CONVENIENT MECHANISM TO SHOW CUSTOM SOFTWARE ASSOCIATION IN THE SOFTWARE BACKPLANE FUNCTION
NIMTREND	-GENERIC TREND OF SOME NIM & UCN RELATED PARAMETERS TO INDICATE NIM OPERATIONS OR PROBLEMS <WITH HELP DISPLAY>		
UCNSUMM	-CONVENIENT MECHANISM TO DISPLAY UCN SUMMARY PEER-PEER PERFORMANCE DATA AND PROVIDES A STATISTICS RESET COMMAND		
NODESTA1	-CONVENIENT MECHANISM TO DISPLAY UCN NODE DETAIL DATA ON PERFORMANCE AND PROVIDES A STATISTICS RESET COMMAND		
NODESTA2	-CONVENIENT MECHANISM TO DISPLAY UCN DETAIL PEER-PEER PERFORMANCE DATA AND PROVIDES A STATISTICS RESET COMMAND		
CNAMEREV	-ALLOWS DETERMINATION OF WHICH US: AM OR CC HAS CUSTOM NAMES WHICH ARE OUT OF SYNCH WITH REST OF THE NODES ON THE LCN		

FOR MORE INFORMATION ON THIS TOOL KIT REFER TO THE CUSTOMER RESOURCE MANUAL SECTION P025 (AVAILABLE FROM TAC)

AM Performance

PERFMENU

- The Perfmenu Schematic has two sub schematics that are specific to Application Module performance; AMDETAIL and AMTREND.(example on following page)

Example:

AMDETAIL

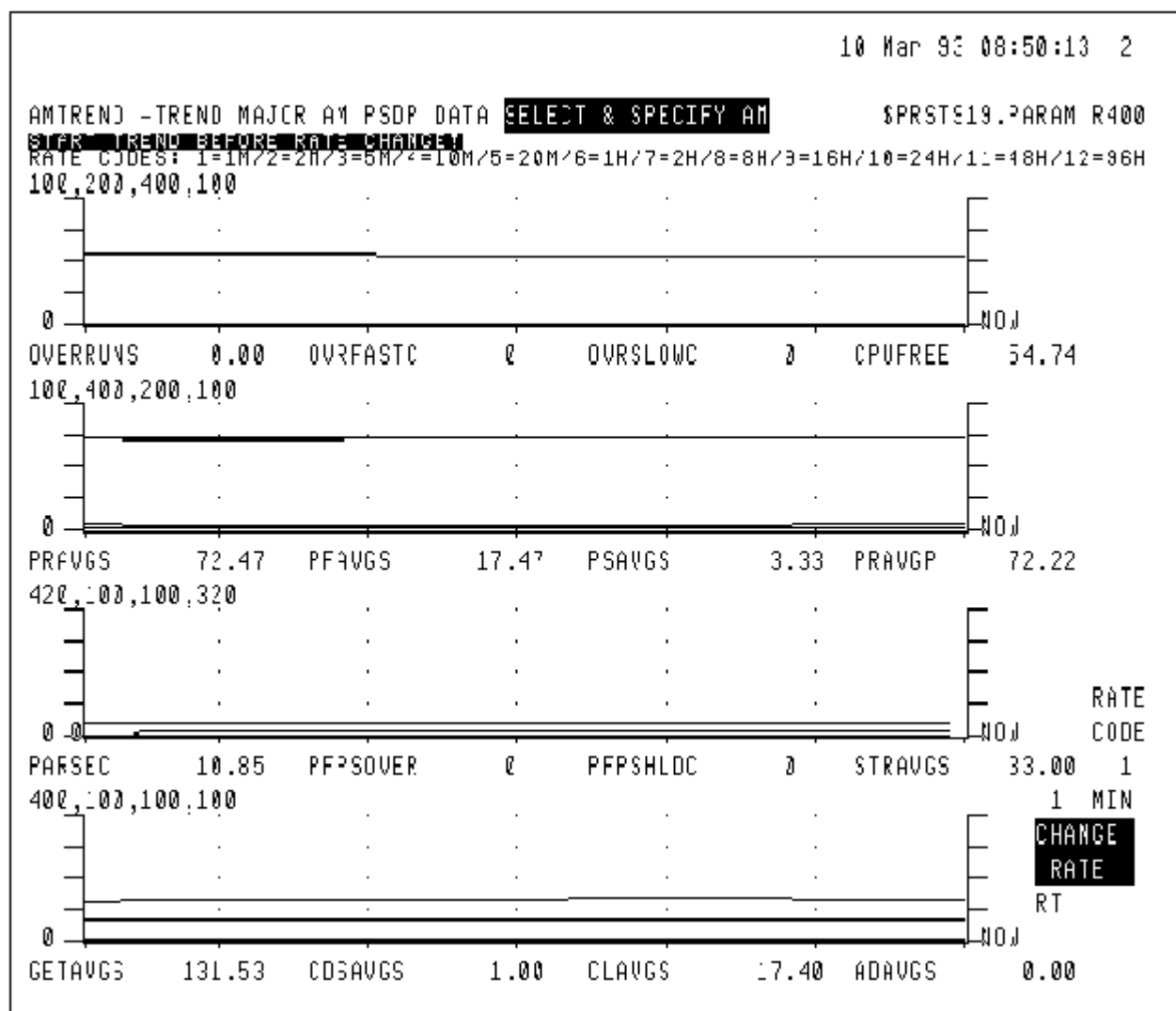
08 Mar 93 11:04:37 2									
AMDETAIL - DETAIL PSOP PARAMETERS SELECT & SPECIFY AM \$PRSTC15.PARAM R400									
HEAPFREE	4734090.	CPTIMEFL	0.00	CPTIMEHM	1.45	CHKPT TIME,MIN			
PARSEC	6.33	CPLMAX	57.97	CPLMIN	54.07				
RPARSEC	16.67	SPARSEC	3.30	IPPRAVGC	0.20				
AMMEMTOT	27483.0	IPFFAVGC	0.20	IPPRVGC	0.20				
PTSESTB	540	IPFFAVGC	0.20	IPPRVGC	0				
IPOVRN	0	IPFSVGC	0.00	IPPRVGC	0				
MISCELLANEOUS, SNAPS		PREVIOUS HOUR		CURRENT HOUR					
HEAPFREE	223143.0	HEAPMIN	193919.0	OJERRUNS	0.00	CYCLES BEHIND			
HEAPFRAG	0	OVRFASTP	1	OJRFASCT	0	FP CYCLE OVRUN			
MEMFREE	4189280.	OVRSLWP	3	OJRSLOWC	0	SP CYCLE OVRUN			
PRAVGS	72.40	PRFVGP	71.67	PRAVGC	72.22	FNTS/SEC			
PRMINC	28	PRMAXP	42	PRMAXC	42	FNTS/CYCLE			
PFAVGS	16.20	PFAVGP	16.40	PFAVGC	16.44	FREFETCHES/SEC			
MCUBAVGC	80	PFAVGP	20	PFAVGC	20	FREFETCHES/CYC			
PSAVGS	3.27	PSFVGP	3.30	PSAVGC	3.30	FOSTSTORES/SEC			
MEMCUBMX	160	PSMAXP	3	PSMAXC	3	FOSTSTORES/CYC			
STRAVGS	34.20	STRAVGF	33.24	STRAVGC	34.62	STCRES/SEC			
ADAVGS	0.00	ADAVGP	0.00	ADAVGC	0.02	FLARM RATE/SEC			
PRCSTATE	PROCESS	ADMAXP	0	ADMAXC	1	FLARMS/CYCLE			
CLAVGS	17.60	CLFVGP	17.33	CLAVGC	17.37	CLs/SEC			
MSAVGS	0.00	NSAVGP	0.00	MSAVGC	0.00	CL MSGS/SEC			
EIPMAXC	0	CLMAXP	19	CLMAXC	17	CLs/SEC MAXIMM			
EIPAVGS	0.00	EIPAVGF	0.00	EIPAVGC	0.00	EIFs/CYCLE			
IDLAUGS	57.42	IDLAUGF	57.34	IDLAUGC	58.74	% CPU IDLE			
GETAVGS	134.00	GETAVGF	115.22	GETAVGC	139.26	REG PARAM/SEC			
CDSAUGS	1.27	CDSAUGF	1.08	CDSAUGC	1.27	CDE PARAM/SEC			
CVBAUGS	79.57	PFFSHLCP	0	PFPSHLDC	0	ESEC HOLD CTRL			
PFPJOER	0	PFFSCVRP	1	PFPQVRC	0	FFFS OVERRUNS			

AM Performance

PERFMENU

Example:

AMTREND

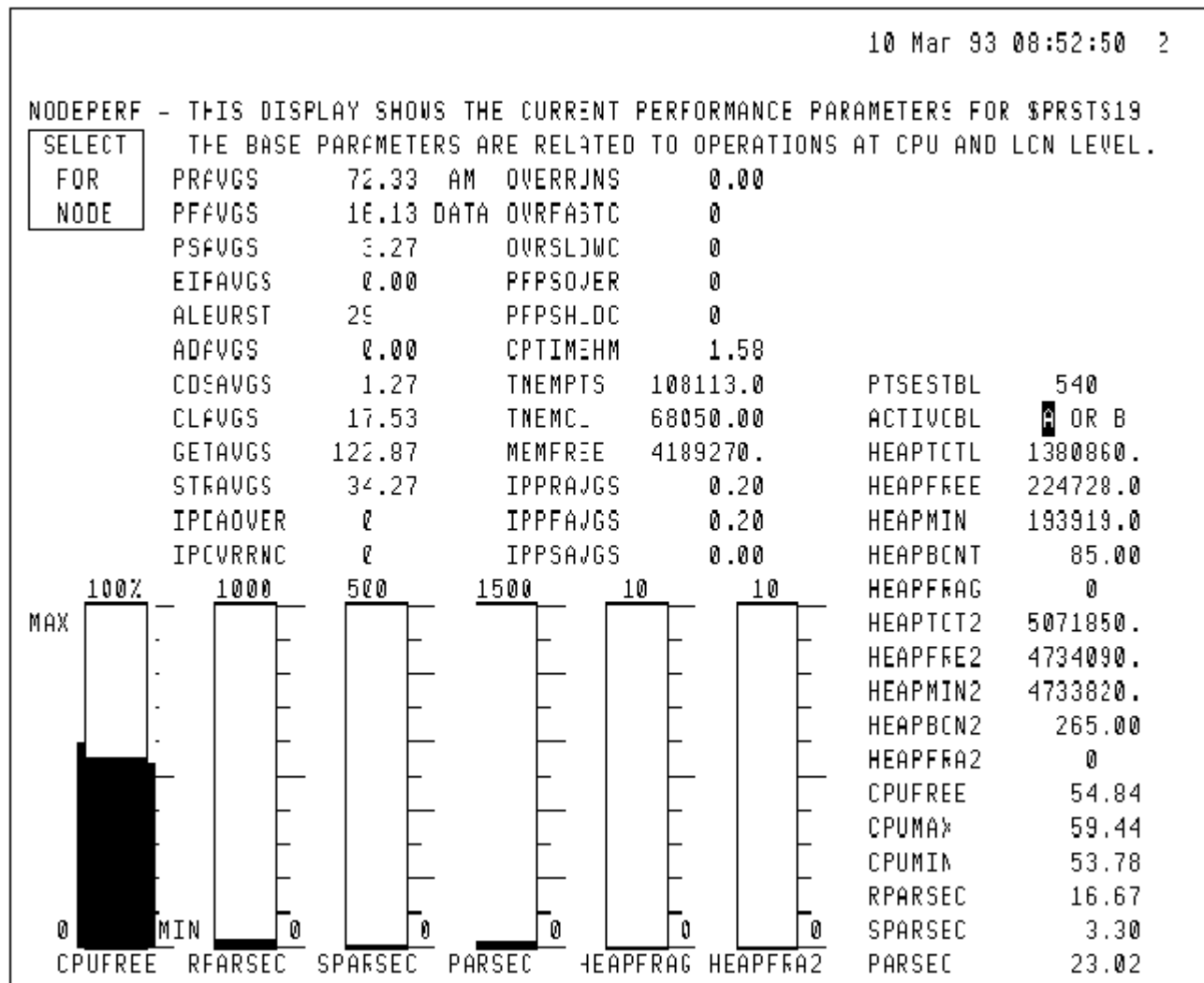


AM Performance

PERFMENU

Example:

NODEPERF



AM Performance

PERFMENU

Example:

CNAMEREV

```
06 Dec 93 09:52:34 3
CNAMEREV - DISPLAY TO ALLOW DETERMINING WHICH US, NG, CG, OR SELECT FOR HELP
R322 AM (WITH CONV LOADED) HAS CUSTOM NAME FILES OUT OF SYNCH INFORMATION
MCREV(1-4) show the date of the custom name files currently on the network.
MCREV(5-8) show the date of the custom name files when node was loaded.
Nodes can get out of synch due to communication errors on the LCN or by missing
messages that files are being modified at the time a node is being loaded.
ALL nodes on the LCN -MUST- be using the same version or a CNAMEREV error will
occur and the node status will be so marked. Usually one node needs reloading.

$PRSTS12 SELECT & SPECIFY NODE $PRSTS20 SELECT & SPECIFY NODE
MCREV(i) MCREV(i)
enm_sets.se 1 12-02-93 10:31:34<THESE>enm_sets.se 1 12-02-93 10:31:34
par_list.se 2 10-29-93 21:24:14<FILES>par_list.se 2 10-29-93 21:24:14
parametr.sp 3 12-02-93 15:11:49<MUST>parametr.sp 3 12-02-93 15:11:49
segments.sp 4 12-02-93 19:11:16<MATCH>segments.sp 4 12-02-93 19:11:16
enm_sets.se 5 12-02-93 10:31:34enm_sets.se 5 10-29-93 21:24:28
par_list.se 6 10-29-93 21:24:14par_list.se 6 10-29-93 21:24:14
parametr.sp 7 12-02-93 15:11:49parametr.sp 7 10-29-93 21:25:02
segments.sp 8 12-02-93 19:11:16segments.sp 8 10-29-93 21:24:33

$PRSTS13 SELECT & SPECIFY NODE $PRSTS19 SELECT & SPECIFY NODE
MCREV(i) MCREV(i)
enm_sets.se 1 12-02-93 10:31:34<THESE>enm_sets.se 1 12-02-93 10:31:34
par_list.se 2 10-29-93 21:24:14<FILES>par_list.se 2 10-29-93 21:24:14
parametr.sp 3 12-02-93 15:11:49<MUST>parametr.sp 3 12-02-93 15:11:49
segments.sp 4 12-02-93 19:11:16<MATCH>segments.sp 4 12-02-93 19:11:16
enm_sets.se 5 11-03-93 11:14:09enm_sets.se 5 10-29-93 21:24:28
par_list.se 6 10-29-93 21:24:14par_list.se 6 10-29-93 21:24:14
parametr.sp 7 11-10-93 08:11:52parametr.sp 7 10-29-93 21:25:02
segments.sp 8 11-05-93 12:21:13segments.sp 8 10-29-93 21:24:33
```

AM Performance

AM Diagnostic Display (AMDIAGNS)

PSDP parameters have been added to determine the points, which take the longest time to execute. Separate lists will be maintained for fast and slow point processors. The longest running CL block name, along with its associated point, will also be saved. An ON/OFF target allows the AM diagnostic to be displayed. The switch will not switch Off the saving of the point name and CL block name that is used for the statistics. When the diagnostic switch is on, the display imposes a significant load on the AM. An example of the schematic AMDIAGNS is shown on the following page.

AM OVERRUN DIAGNOSTIC DISPLAY (SMCC)

A display called "AM OVERRUN DIAGNOSTIC" is provided in the SMCC main menu. This display may be called if an AM has failed and it will show the point name and CL block name (if applicable) that the AM was processing at the time of the failure.

AM Performance

Below is an example of the AM Diagnostic Display

AM DIAGNOSTIC DISPLAY (AMDIAGNS)

```
                                06 Dec 95 08:04:13    4
AMDIAGNS                        AM Diagnostic Display                        R510
Select to                        USE FAST BUTTON FOR RAPID UPDATES!          PERFMENU
Specify
AM Node # $PRSTS40

LAST_ENT: C9CP14                Name of the current Point being Processed
                                by the fast or slow Point Processor.
NOTE - EVEN WITH 'FAST' ACTIVE, THESE
      WILL BE BLANK MUCH OF THE TIME.
LAST_CLB: C9_CL13                Name of the current CL block being
                                executed in foreground.

DIAGSTAT: ON <Select to toggle> Diagnostic collection status of MAXFPTNM,
                                MAXSPTNM, & MAXCLNM. 'OFF' will show no data.
                                CAUTION! 'ON' is a significant load on the AM.

MAXFPTNM: C3CL2 C9CL26            Names of the last 2 slowest
                                entities detected on the FPP.

MAXSPTNM: C0SW5 C0SW13            Names of the last 2 slowest
                                entities detected on the SPP.

MAXCLNM: C3_CL4 C3CL2 C0_CL24 C0CL23
          BLOCK/ENTITY NAME      BLOCK/ENTITY NAME
          Names of the last 2 slowest CL
          block names & associated Points

SMCC ALLOWS ACCESS TO THE LAST_ENT AND LAST_CLB VALUES IN CASE OF AN AM CRASH.

                                34515
```


AM Performance

- When using the PSDP parameters that identify a cycle (MCVBMXCC, PFMXCYCC, PRMXCYCC, etc.) , the value returned is the chronological cycle as of the previous midnite.
- The returned value may be from 1 to 172,800 which represents the cycles in a twenty four hour period.
- This returned value must now be reduced to a specific cycle per schedule, e.g. cycle 0 or 1 for the one second schedule, cycle 0,1,2, or 3 for the two second schedule, etc.
- This is accomplished by dividing the returned value by the cycles in each schedule period. The remainder reflects the cycle in the scheduled period when the MAX cvb usage occurred, the MAX prefetch occurred, or the MAX number of points ran.

Example:

`$PRSTSxx.PRMXCYCC = 5695`

1 sec schedule = 2 cycles	$5695 / 2 = 2847$	remainder = 1
2 sec schedule = 4 cycles	$5695 / 4 = 1423$	remainder = 3
5 sec schedule = 10 cycles	$5695 / 10 = 569$	remainder = 5
10 sec schedule = 20 cycles	$5695 / 20 = 284$	remainder = 15

etc. for the rest of the schedule periods.

- The remainder value identifies the cycle per schedule period when the maximum number of points were scheduled to run
- Knowing the cycle per scheduled period of the occurrence now allows you to define the points running in the defined cycle using `$PRSTSxx.AMSCHDMP(0)` or Documentation Tools.

AM Utility Tools

- TDC3000 provides two major utility tools to aid the user in running where-used searches. These tools, DOCTOOL and FINDNAMES are especially useful to the Application Module user.
- The difference between Doctool and Findnames is the location of the search. Doctool may search any Hiway, Ucn, Unit, or Node where Findnames is limited to searches of History Module files.
- Both tools are useful in finding all points that use a specific Custom Data Segment, or Generic Block program. However, if the search is conducted via Find Names in the History Module, it would search the AM Checkpoint files and would require a checkpoint save to be current.
- When searching for a source file where a Block was created, Find Names would be the utility of choice. Doctool does not handle file searches. However, once a file is defined, Doctool may conduct searches, filters, sorts on that file.

AM Utility Tools

DOCUMENTATION TOOL

- Documentation Tool is selected from the Engineers Main Menu

Example:

12 Mar 93 09:46:55 2

ENGINEERING PERSONALITY MAIN MENU				
UNIT NAMES	HIWAY GATEWAY	PICTURE EDITOR		
AREA NAMES	LOGIC BLOCKS	FREE FORMAT LOGS		
CONSOLE NAMES	APPLICATION MODULE	BUTTON CONFIGURATION		
LCN NODES	COMPUTING MODULE	HM HISTORY GROUPS		
SYSTEM WIDE VALUES	NETWORK INTERFACE MODULE			
VOLUME CONFIGURATION				
		DOCUMENTATION TOOL		
	BUILDER COMMANDS	AREA DATA BASE		
Support Functions and Utility Programs				
COMMAND PROCESSOR	SYSTEM MENU	SYSTEM STATUS	CONSOLE STATUS	
SUPPORT UTILITIES	SMCC/ MAINTENANCE	R400 (C) HONEYWELL INC., 1984		

AM Utility Tools

DOCUMENTATION TOOL

- Select Query for search of points in Hiway, UCN, Unit, or Node.

Example:

10 Mar 93 08:55:01 2

FIND	FILTER	SORT	QUERY	OUTPUT	DEFINE CNTRL FILES	OPEN	CLOSE
------	--------	------	-------	--------	--------------------	------	-------

CTL	CTL	CTL	CTL	CTL	CTL	F2	F4	F5	F8	F9	F10
U	D	R	L	T	B	DEL	FFWD	FBACK	PATH	ERRORS	FIELD

AM Utility Tools

DOCUMENTATION TOOL

- This example will search Node 19 (AM) for all AM points with parameter Nopkg greater than 0. It will print parameters Pkgname (1..3) for those points. Pkgname value is the name of a Custom Data Segment.

Example:

10 Mar 93 08:58:20 2

FIND	FILTER	SORT	QUERY	OUTPUT	DEFINE CNTRL FILES	OPEN	CLOSE
------	--------	------	-------	--------	--------------------	------	-------

Build HWY
Select Pre-Built UCN
Delete Pre-Built Unit
Node

Save Overwrite

Node List? 19

Entity Names?

Conditions: NOPKG>0

Param values to show: PKGNAME(1) PKGNAME(2) PKGNAME(3)

Descriptor? PKGNAMES(1,,3)

Resource/Entity Types:

ALL AM UCN HWY CM

ALL REG SWITCH CUSTOM COUNTER TIMER NUMERIC FLAG

LOGIC

Keylock must be engineer.

AM Utility Tools

DOCUMENTATION TOOL

- The following example is the results of the search. The first column is the entity name, and the second, third and fourth columns refer to the corresponding Pkgname 1, 2, & 3.

Example:

10 Mar 93 09:01:34 2

FIND	FILTER	SORT	QUERY	OUTPUT	DEFINE CNTRL FILES	OPEN	CLOSE
ENTITY		PKGNAME(1)	PKGNAME(2)	PKGNAME(3)			
RAMP301		RAMP2	000	000			
RAMP302		RAMP2	000	000			
RAMP303		RAMP2	000	000			
RAMP305		RAMP2	000	000			
RAMP306		RAMP2	000	000			
RAMP307		RAMP2	000	000			
RAMP304		RAMP2	000	000			
RAMP308		RAMP2	000	000			
EC305		CDS_305	000	000			
EC306		TIME1	000	000			
PHCST306		CLFUN2	000	000			
FILCREAT		TEMPCDS	000	000			
PRO_SIM1		PRO_SIM	000	000			
CLRED306		CLRED306	000	000			
PHCST305		PKG_305	000	000			
CLWRT305		TEMP305	000	000			
CLRED305		CLRED305	000	000			
FILETRY		TEMPCDS2	000	000			
HIST306		VALUE306	TEMP306	000			
EC302		CDS_302	000	000			
PHCST302		FLCST302	000	000			
DEANCL		DEANCL	000	000			
Operation complete.							

- Now Find, Filter, and Sort may be used to extract the relevant data. The modified data may also be printed to a printer for later use.

AM Utility Tools

FIND NAMES

- The Find Names utility is entered via the Command Processor. The command FN will call up the Find Names overlay.

Example:

12 Mar 93 10:59:08 2
USER PATH : NET>TES`>

SELECT DATA BASE TO SEARCH

AM	checkpoints
UCN	
HG	
CM	
HISTORY	unit files
AREA	data base files
PICTURE ED	source files
BUTTON	source
TEXT	files
ALL	

fn

note: Ensure that the AM Checkpoint is current when searching this area.

FIND NAMES

USER PATH : NET>TES~>

ALL REFS	all of the above
----------	------------------

 f_n

AM Utility Tools

FIND NAMES

12 Mar 93 11:01:41 2
USER PATH : NET>TEST>

Specify a pattern to match for each of the items below (this will narrow the search) or leave the default of "*" (ALL)

CDS

AM checkpoints to search?

ENTITIES to search?

Where is the data base?

DEFAULT NET LOCATION

OTHER

SUPPRESS columns of output?

NO

YES

Hit ENTER -execute command, CANCEL -start over, MENU -exit, HELP for info

fn

AM Utility Tools

FIND NAMES

12 Mar 93 11:03:08 2
USER PATH : NET>TEST>

FN			
Loading Overlay			
FN AMCP * ENTITY * CDS RAMP2			
MEDIA	AMCP	ENTITY	CDS

NET>&F39	39	RAMP301	R&MP2
NET>&F39	39	RAMP302	R&MP2
NET>&F39	39	RAMP303	R&MP2
NET>&F39	39	RAMP305	R&MP2
NET>&F39	39	RAMP306	R&MP2
NET>&F39	39	RAMP307	R&MP2
NET>&F39	39	RAMP304	R&MP2
NET>&F39	39	RAMP308	R&MP2
NET>&F41	41	RAMP309	R&MP2
NET>&F41	41	RAMP310	R&MP2
NET>&F41	41	RAMP311	R&MP2
NET>&F41	41	RAMP312	R&MP2
NET>&F41	41	RAMP313	R&MP2
NET>&F41	41	RAMP314	R&MP2
NET>&F41	41	RAMP315	R&MP2
NET>&F41	41	RAMP316	R&MP2
NET>&F41	41	PHCST316	R&MP2
NET>&F45	45	RAMP317	R&MP2