

AQM-APC for InTune™ User's Guide

Version 4.3.1

October, 2002



Publication Date: October 2002

This publication applies to Version 4 Release 3

Please direct all questions about AQM-APC or comments on this document to your product distributor.

Application Performance Control (APC®) Software is part of the Application Quality Management (AQM®) Product Family. AQM is a registered trademark of Trilog Holding AG. APC is a registered trademark of A.P.M. AG.

IBM, IMS, SQL, DB2, and CICS are registered trademarks of International Business Machines Corporation. ISPF is a licensed program product of International Business Machines Corporation. Acrobat is a registered trademark of Adobe Systems Inc.

InTune® is a registered trademark of BMC Software Inc.

All other company or product names are the service marks, trademarks or registered trademarks of their respective owners.

©Copyright 1996-2002 by A.P.M. AG. All rights reserved. No part of this document covered by copyright hereon may be copied or reproduced by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or in information storage and retrieval systems - without prior written permission from the publisher.

Customer Support

You can obtain technical support by using the Support page on the BMC Software Web site or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, please see "Before Contacting BMC Software." "Before Contacting BMC Software."

Support Web Site

You can obtain technical support from BMC Software 24 hours a day, 7 days a week at <http://www.bmc.com/support.html>. From this Web site, you can

- read overviews about support services and programs that BMC Software offers
- find the most current information about BMC Software products
- search a database for problems similar to yours and possible solutions
- order or download product documentation
- report a problem or ask a question
- subscribe to receive e-mail notices when new product versions are released
- find worldwide BMC Software support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

Support by Telephone or E-mail

In the United States and Canada, if you need technical support and do not have access to the Web, call 800 537 1813. Outside the United States and Canada, please contact your local support center for assistance. To find telephone and e-mail contact information for the BMC Software support center that services your location, refer to the Contact Customer Support section of the Support page on the BMC Software Web site at www.bmc.com/support.html.

Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that Customer Support can begin working on your problem immediately:

- product information
 - product name
 - product version (release number)
 - license number and password (trial or permanent)
- operating system and environment information
 - machine type
 - operating system type, version, and service pack or other maintenance level such as PUT or PTF
 - system hardware configuration
 - serial numbers
 - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the problem
- commands and options that you used
- messages received (and the time and date that you received them)
 - product error messages
 - messages from the operating system, such as file system full
 - messages from related software

Contents

Figures List	v
Panels List.....	vii
Tables List	ix
JCL List.....	xi
Preface.....	xiii
How This Manual Is Organized	xiii
The AQM-APC Library	xiii
Online Documentation.....	xiv
AQM-APC Advantages.....	xv
What's New with AQM-APC 4.3.....	xvi
Chapter 1. Getting Started	1
Using the Menus and Panels	1
Using Primary Commands	2
Using Line Commands.....	2
Using Generic Notation.....	3
Sorting List Panels	3
Defining System Image.....	3
Starting the Online Dialog	4
Chapter 2. Using the Central Component	5
Functional Overview.....	5
The Central Component Menu.....	7
Global Print JCL	9
Measurement Lists.....	10
Measurement Overview	12
Displaying InTune Measurements	14
DB2 Plan Overview	17
Alert Management.....	18
Using the TOP Scope	19
Listing All Alerts.....	21
Alert Overview.....	24
Show or Review Alert.....	26
Total Alert Text.....	27
Inserting an Alert.....	28
Job Query Facility.....	30
Displaying Job Query Results	32
Generating a Bulk Alert.....	34
Job Overview	35
Data Mining	37
Defining the Data Mining Scope.....	38
The Data Mining Menu.....	40
Data Mining Application Programs.....	41
Data Mining System Programs	43
Data Mining Subsystems	45
Data Mining DB2 Plans	46
Data Mining Job Steps.....	48
<i>Cross Referencing the Job Steps</i>	<i>50</i>
<i>Cross Referencing the Subsystem</i>	<i>52</i>
<i>Displaying the Significant Statements</i>	<i>53</i>

Exporting Central Component Data	54
Export Job Information - Job APCBJEXP	54
Export Alerts - Job APCXJEXP	56
Export Data Mining - Job APCBJDAX	58
Measuring the Jobs of Critical Paths - Job APCBJCRI.....	60
Chapter 3. Using the Checkpoint Checker.....	63
Functional Overview of the Checkpoint Checker	63
Technical Overview of the Checkpoint Checker	64
AQM-APC Server.....	64
TSO Online	64
Reports	65
Benefits	65
Using the Checkpoint Checker	66
Displaying Checkpoint Query Results.....	68
Job APCKJCPT - Export Checkpoint Information.....	70
Generating an Output List.....	72
Generating an Export File	72
Chapter 4. Using the CICS Feature.....	73
The CICS Feature Menu	75
Global Print JCL.....	77
Transaction Information	78
Transaction History.....	80
General Module Information	81
Module History	83
Module Statements.....	84
Plan - SQL Information	85
Plan Overview.....	87
SQL Statements Exceeding Thresholds.....	88
PSB - DLI Information	90
PSB History Information.....	92
DLI Statements	93
Overview of InTune Measurement Reports	94
#SJS - Sampler and Job Statistics	95
System Information	96
System Overview	98
Alert Management.....	99
How the TOP Limit Works	99
Alert List Information TRX.....	100
Show, Review, or Insert an Alert.....	103
Alert List Information changed Modules	104
Show, Review, or Insert an Alert.....	107
Exporting CICS Feature Data - Job APCCJEXP	108
Chapter 5. Using the IMS Feature.....	111
The IMS Feature Menu	113
Global Print JCL.....	115
Transaction Information	116
Transaction History.....	118
General Module Information	119
Module History	121
Module Statements.....	122
Plan - SQL Information	123
Plan Overview.....	125
SQL Statements Exceeding Thresholds.....	126
PSB - DLI Information	128
PSB History Information.....	130
DLI Statements	131

Overview of InTune Measurement Reports	132
#SJS - Sampler and Job Statistics.....	133
System Information	134
System Overview	136
Alert Management.....	137
How the TOP Limit Works	137
Alert List Information TRX.....	138
Show, Review, or Insert an Alert.....	141
Alert List Information changed Modules.....	142
Show, Review, or Insert an Alert.....	145
Exporting IMS Feature Data - Job APCIJEXP	146
Index	149

Figures List

Figure 1: Functional Diagram of the Central Component.....	5
Figure 2: Panel Hierarchy of the Central Component	6
Figure 3: How AQM-APC Batch Scope Reduction Works	20
Figure 4: Example Job Export Record.....	55
Figure 5: Example of Job Information Export Parameters	55
Figure 6: Example Alert Export Record	57
Figure 7: Example of Alert Export Parameters	57
Figure 8: Example of Data Mining Export Parameters	59
Figure 9: Example of APCBCCRI Member.....	61
Figure 10: Example of Checkpoint Checker Export Parameters.....	71
Figure 11: How System Control Works for the CICS Feature.....	73
Figure 12: Panel Hierarchy of the CICS Feature	74
Figure 13: Record Layout for Export File	108
Figure 14: Example of Input to APCCCEXP Member.....	109
Figure 15: How System Control Works for the IMS Feature.....	111
Figure 16: Panel Hierarchy of the IMS Feature	112
Figure 17: Record Layout for Export File	146
Figure 18: Example of Input to APCICEXP Member	147

Panels List

Panel APCXP000: AQM-APC Main Menu	4
Panel APCBP000: Central Component Menu.....	7
Panel APCXPP01: Global Print JCL	9
Panel APCBP001: Measurement List	10
Panel APCBP011: Measurement Overview	12
Panel APCBP101: Sampler and Job Statistics.....	14
Panel APCJP111: DB2 Plan Overview	17
Panel APCBP002: Alert List	21
Panel APCBP021: Alert Overview.....	24
Panel APCBP201: Show/Review Alert.....	26
Panel APCBP022: Total Alert Text.....	27
Panel APCBPIAL: New User Alert Window.....	28
Panel APCBP003: Job Query Facility.....	30
Panel APCBP031: Job List	32
Panel APCBP302: Bulk Alert Text	34
Panel APCBP301: Job Overview Panel.....	35
Panel APCBP005: Data Mining Selection	38
Panel APCBP051: Data Mining Menu.....	40
Panel APCBP501: Data Mining Application Programs.....	41
Panel APCBP501: Data Mining System Programs.....	43
Panel APCBP501: Data Mining Subsystems	45
Panel APCBP501: Data Mining DB2 Plans	46
Panel APCBP502: Data Mining Jobsteps	48
Panel APCBP503: Data Mining XREF Jobstep.....	50
Panel APCBP504: Data Mining XREF Subsystem	52
Panel APCBPMSS: Significant Statements	53
Panel APCKP001: Checkpoint Query Facility	66
Panel APCKP002: Checkpoint Checker List	68
Panel APCGP000: CICS Feature Menu	75
Panel APCXPP01: Global Print JCL	77
Panel APCDP001: Transaction Information	78
Panel APCGP011: Transaction Overview	80
Panel APCGP002: General Module Information.....	81
Panel APCGP022: General Module Overview	83

Panel APCDP201: Module Statements	84
Panel APCGP003: Plan Information	85
Panel APCGP032: Plan Overview	87
Panel APCGP203: SQL Statements.....	88
Panel APCGP203: Panel showing a selected SQL statement	89
Panel APCGP004: PSB Information	90
Panel APCGP042: PSB Overview	92
Panel APCGP204: DLI Statements	93
Panel APCDP005: Sampler and Job Statistics.....	95
Panel APCGP006: System Information.....	96
Panel APCGP062: System Overview	98
Panel APCDP007: Alert List -- All Issued.....	100
Panel APCDP701: Show/Review/Insert Alert Panel.....	103
Panel APCDP008: Alert List Changed modules.....	104
Panel APCDP801: Show/Review/Insert Alert Panel.....	107
Panel APCGP000: IMS Feature Menu	113
Panel APCXPP01: Global Print JCL	115
Panel APCDP001: Transaction Information	116
Panel APCGP011: Transaction Overview.....	118
Panel APCGP002: General Module Information	119
Panel APCGP022: General Module Overview	121
Panel APCDP201: Module Statements	122
Panel APCGP003: Plan Information.....	123
Panel APCGP032: Plan Overview.....	125
Panel APCGP203: SQL Statements.....	126
Panel APCGP203: Panel showing a selected SQL statement	127
Panel APCGP004: PSB Information	128
Panel APCGP042: PSB Overview	130
Panel APCGP204: DLI Statements	131
Panel APCDP005: Sampler and Job Statistics.....	133
Panel APCGP006: System Information.....	134
Panel APCGP062: System Overview	136
Panel APCDP007: Alert List -- All Issued.....	138
Panel APCDP701: Show/Review/Insert Alert Panel.....	141
Panel APCDP008: Alert List Changed modules.....	142
Panel APCDP801: Show/Review/Insert Alert Panel.....	145

Tables List

Table 1: List of InTune Chapters	16
Table 2: Alert Overview	18
Table 3: Alert Reason Codes	23
Table 4: Record Description for Job Export File	54
Table 5: Parameters for APCBCJEX Member.....	55
Table 6: Record Description for Alert Export File.....	56
Table 7: Parameters for APCXCAEX Member	57
Table 8: Parameters for APCBCDAX Member.....	58
Table 9: Parameters for APCBCCRI Member	60
Table 10: Parameters for APCKCCPT	70
Table 11: Alert State Codes	101
Table 12: Alert Reason Codes	102
Table 13: Alert State Codes	105
Table 14: Alert Reason Codes	106
Table 15: Parameters for APCCCEXP Member	109
Table 16: Alert State Codes	139
Table 17: Alert Reason Codes	140
Table 18: Alert State Codes	143
Table 19: Alert Reason Codes	144
Table 20: Parameters for APCICEXP Member.....	147

JCL List

JCL for Job APCBJEXP.....	54
JCL for Job APCXJEXP.....	56
JCL for Job APCBJDAX.....	58
JCL for Job APCBJCRI.....	60
JCL for Job APCBJCPT.....	70
JCL for Job APCCJEXP.....	108
JCL for Job APCIJEXP.....	146

Preface

This manual describes how to use the features of AQM-APC for InTune to significantly reduce the manual effort required to implement your strategy for managing application performance. AQM-APC is designed for use with version 3.1 of InTune.

How This Manual Is Organized

Chapter 1 provides helpful hints and getting started information that will assist you in the use and operation of the AQM-APC online dialogs.

Chapter 2 illustrates and explains how to use the Central Component online panels. Additionally, it details how to use the batch jobs that will export AQM-APC information and measure the jobs of critical paths.

Chapter 3 explains the functionality and use of the optional Checkpoint Checker feature.

Chapter 4 illustrates and explains how to use the optional CICS Feature online panels and details how to export AQM-APC information.

Chapter 5 illustrates and explains how to use of the optional IMS Feature online panels and details how to export AQM-APC information.

The Index allows you to access specific information quickly.

On the last page, you will find a customer comment form. To help us improve the documentation, please return this form to your product distributor.

The AQM-APC Library

To find additional information about AQM-APC:

- *AQM-APC Administrator's Guide* explains how to install and customize AQM-APC. Additionally, this guide details the maintenance functions and system messages of AQM-APC. Other information includes detailed descriptions of the AQM-APC batch jobs and the AQM-APC Server.
- *AQM-APC for STROBE User's Guide* describes how to use AQM-APC in a *STROBE* environment.

Online Documentation

- AQM-APC books are available in PDF format for online viewing using the Acrobat Reader. These files can be downloaded from the Customer Support Option of the AQM-APC website. The internet address is: <http://www.apm-ag.com>.
- Online help is available through the ISPF dialog panels.

AQM-APC Advantages

To make work easier for the application performance team, AQM-APC provides the following advantages:

- Central Component:
 - Creates statistical measurements for every executed job step and maintains this information in its own history database.
 - Automates InTune measurement of all job steps exceeding statistical maximum limit.
 - Automates InTune measurement of all new and changed programs.
 - Detects critical job steps and provides Alert Management.
 - Manages InTune measurement requests -- even in multi-system environments.
 - Allows user defined AQM-APC Scope of work.
 - Gathers only important InTune measurement data with history.
 - Provides both update and read-only access options for AQM-APC parameters.
 - Identifies top consuming job steps.
 - Passes data to other products, e.g., data dictionary.
 - Data mining pinpoints high consuming objects for performance tuning and cross references the job steps that use them.
 - Checkpoint Checker automates the control process of checkpoint writing.
- CICS and IMS Features:
 - Measures CICS and IMS systems automatically on a regular basis.
 - Interprets InTune measurements according to user parameters thereby extracting only important information about InTune measurements.
 - Aggregates information about InTune measurements to information for a whole online system.
 - Navigation and cross referencing within the online dialog brings the user from a problematic transaction down to the statement cause.
 - Gathers historical information for transaction, modules, DB2 plans, and PSBs for up to 18 months.
 - Detects critical transactions and provides Alert Management.

AQM-APC guarantees you maximum flexibility:

- Parameter control allows the user to change the general settings of AQM-APC.
- Parameter control allows the user to enable or disable certain functions.
- Through defined interfaces, AQM-APC can be easily adapted to any environment.
- An easy to use, comprehensive set of ISPF panels allows users to control AQM-APC and manages the information gathered.

What's New with AQM-APC 4.3

Chapter 1. Getting Started

AQM-APC is a software package used to greatly support the implementation of APM (Application Performance Management). AQM-APC significantly reduces the degree of manual effort required to implement the APM strategy and ensures continuous processing within each phase. AQM-APC makes it possible to implement optimization measures consistently and strategically.

AQM-APC was developed and is continuously enhanced based on the practical experiences of InTune experts. As a result, the AQM-APC functions are specifically tailored to offer practical solutions to fulfill users' needs.

AQM-APC consists of the following components:

- Central Component
- CICS Feature
- IMS Feature
- AQM-APC Server
- Checkpoint Checker

This *AQM-APC for InTune User's Guide* describes how to use the online dialogs of the Central Component, Checkpoint Checker, CICS Feature, and IMS Feature when integrated into an InTune environment. Additionally, this book details the end-user batch jobs that will export AQM-APC data or measure jobs of a critical path. Detailed information about other AQM-APC batch jobs and parameter customization can be found in the *AQM-APC Administrator's Guide*.

This chapter, "Getting Started," provides you with the general information you need to use the ISPF panels of AQM-APC. Subsequent chapters document the detailed online use of each of the AQM-APC features: the Central Component, the CICS Feature, and the IMS Feature.

Using the Menus and Panels

After the batch jobs have been executed for the first time, you can review all AQM-APC batch results using the ISPF panels. To startup the online dialog, simply execute REXX procedure APC (the name of this procedure may have been changed during installation). The Main Menu is displayed, see page 4. If this is the first time you have logged on, the General Parameters panel will be displayed and you must enter your distributor supplied password into the password field. After entering the password, the Main Menu will be displayed. The online services can be called multiple times from one TSO user (using split screen). However, it cannot be called more than once in one logical screen.

In rare instances, the value displayed for a field on a panel may contain all 9's separated by a decimal point, e.g., 999.999. This means the actual value is too large for the display.

With the online dialog, there are two kinds of commands that can be used on the menus and panels: *primary commands* and *line commands*.

Using Primary Commands

Each menu and panel allows you to use primary commands. Primary commands are those that you enter on the COMMAND line. Use primary commands to perform functions that affect the whole menu or panel with which you are working. The most commonly used primary commands are the following:

- SORT
Sorts the sequence of the information that is listed on the panel using the desired column. See section "Sorting List Panels" on the next page for details on how to sort.
- SORT STD
Changes the standard sort order of the specific panel for a specific TSO user. The sort order column is highlighted. See section "Sorting List Panels" on the next page for details on how to sort.
- END (or PF3)
Saves changed data directly and either displays the next panel or returns you to the calling panel if there are no more panels to display.
- CANCEL or CAN
Cancels all keyed input for the specified function and returns you to the calling panel. For example, if you are defining specific information pertaining to a job exclusion, when you enter CAN, your input to all panels for the specified exclusion will be canceled.
- INSERT or I
Displays an insert panel on which the specific information pertaining to a new item can be defined.

Using Line Commands

Some panels allow you to use line commands. Line commands are commands that you enter on a particular item in a row within the body of the panel. Line commands allow you to work with a specific item displayed on a list. All available line commands are defined along with the panel that supports them.

On list panels, line command X can be used to bypass the normal AQM-APC procedures and invoke procedure APCBRXX or APCDRXX. These REXX procedures can be customized to pass AQM-APC data from the selected entry to another product or to call a user written procedure. For more information, refer to the *AQM-APC Administrator's Guide*.

Using Generic Notation

Some panels allow you to use generic notation. Generic notation, also called pattern matching, allows you to easily specify more than one name (e.g., job name) by the use of wildcards. Use the underscore '_' as a generic character (or wildcard) to represent **one** character or use the asterisk '*' as generic character to represent **one or more** characters at the **end** of the name.

For example, defining a job name exclusion for ABC* would exclude all jobs beginning with the letters ABC. Entering a query selection for job name for A_C_E__ would select all jobs with an A in the first position, a C in the third position, an E in the fifth position and any character in the second, fourth, sixth, seventh, and eighth position.

Sorting List Panels

Most panels of the online dialog are data lists that consist of columns and rows. Each list panel has a standard default sort order. The sort order column is always highlighted.

To change the sort order of the data listed on a panel, use one of the following methods:

- **SORT primary command:** Temporarily changes the sort order based on another column. Use the SORT command with the column name abbreviation. For example, SORT E would sort the rows of data based on the Elapsed time column.

Note: On each list panel, the SORT command and its corresponding column abbreviations are listed. The column abbreviation is usually the first one or two characters of the column name.

- **Cursor sensitive sort:** Temporarily changes the sort order based on another column. Simply place the cursor on the data within the new sort order column and press <ENTER>.
- **SORT STD primary command:** Permanently changes the standard sort order based on another column. To change the standard sort order and reflect this change in your TSO user profile, do the following:
 1. Choose the new sort order column by using either of the temporary methods.
 2. Enter primary command SORT STD. The new sort order column for the panel will be reflected in your TSO user profile.

Defining System Image

In the upper left hand corner of all panels is the system image name. The system image name should uniquely identify in which environment the CICS Feature is installed, i.e., test, production. It is a customizable parameter in the startup REXX procedure APC (parameter APCSIMG). For information on customizing this parameter, see *the AQM-APC Administrator's Guide*.

Starting the Online Dialog

To startup the online dialog, simply execute TSO command TSO APC (the name of this procedure may have been changed during installation). The following AQM-APC Main Menu will be displayed.

```

APCXP000 =====
          APC FOR INTUNE
          PROD ----- Version 4.3.0
          =====
          Enter an OPTION ==>
                1 AQM-APC Central Component
                2 AQM-APC CICS Feature
                3 AQM-APC IMS Feature
                4 InTune
                5 AQM-APC Parameters
                6 AQM-APC Maintenance
                X or END

          (c)2002, A.P.M. AG. All rights reserved.
          CICS and IMS are trademarks of IBM.
          InTune is a registered trademark of BMC Software Inc.
  
```

Panel APCXP000: AQM-APC Main Menu

The following options are available on the AQM-APC Main Menu:

-
- 1** Access the online dialog for the Central Component. See "Chapter 2. Using the Central Component" of this book beginning on page 5.
 - 2** Access the online dialog for the CICS Feature. For details on using this online dialog, see "Chapter 4. Using the CICS Feature" beginning on page 73.
 - 3** Access the online dialog for the IMS Feature. For details on using this online dialog, see "Chapter 5. Using the IMS Feature" beginning on page 111.
 - 4** Access InTune directly.
 - 5** Define or review the general parameters for each of the three AQM-APC components. Refer to the *AQM-APC Administrator's Guide* for details regarding these parameter definitions.
 - 6** Review and maintain AQM-APC information and logs of the Central Component and CICS and IMS Features. Additionally, you can define alert delete options for the Central Component. For information on using this option, refer to the *AQM-APC Administrator's Guide*.
- X** Exit the Central Component dialog.
-

Chapter 2. Using the Central Component

This chapter describes how to use the ISPF panels of the Central Component and how to use batch jobs that will export AQM-APC information and measure the jobs of critical paths.

Functional Overview

AQM-APC scans the load, job, and procedures libraries you define and locates all changed modules. Additionally, SMF job step termination (SMF 30, subtype 4) records are read, statistics calculated, and current consumption values checked for anomalies. The changed modules, job steps exhibiting a significant increase in resource consumption, and specific job steps you identify as 'user alerts' become measurement requests to InTune. The resulting measurement information is then interpreted and filtered by AQM-APC. The measurements are stored for accessibility through the online panels for up to 18 months.

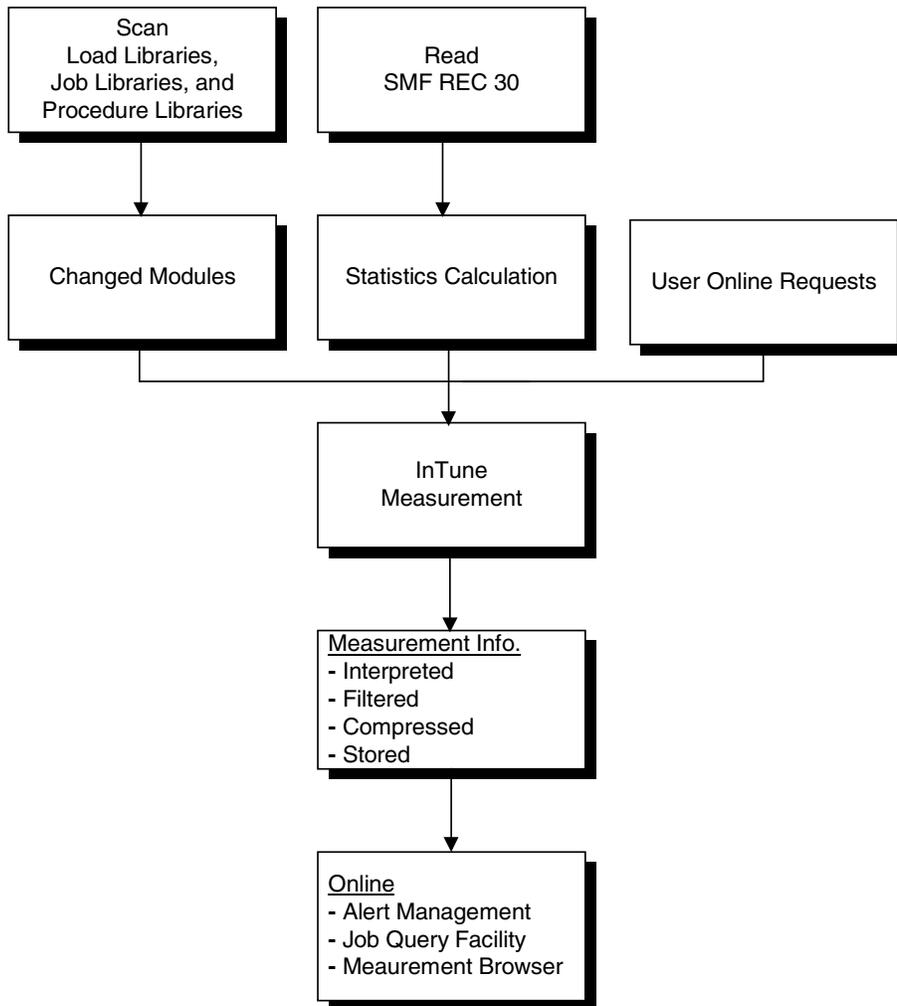


Figure 1: Functional Diagram of the Central Component

The following is an overview of the Central Component online dialog:

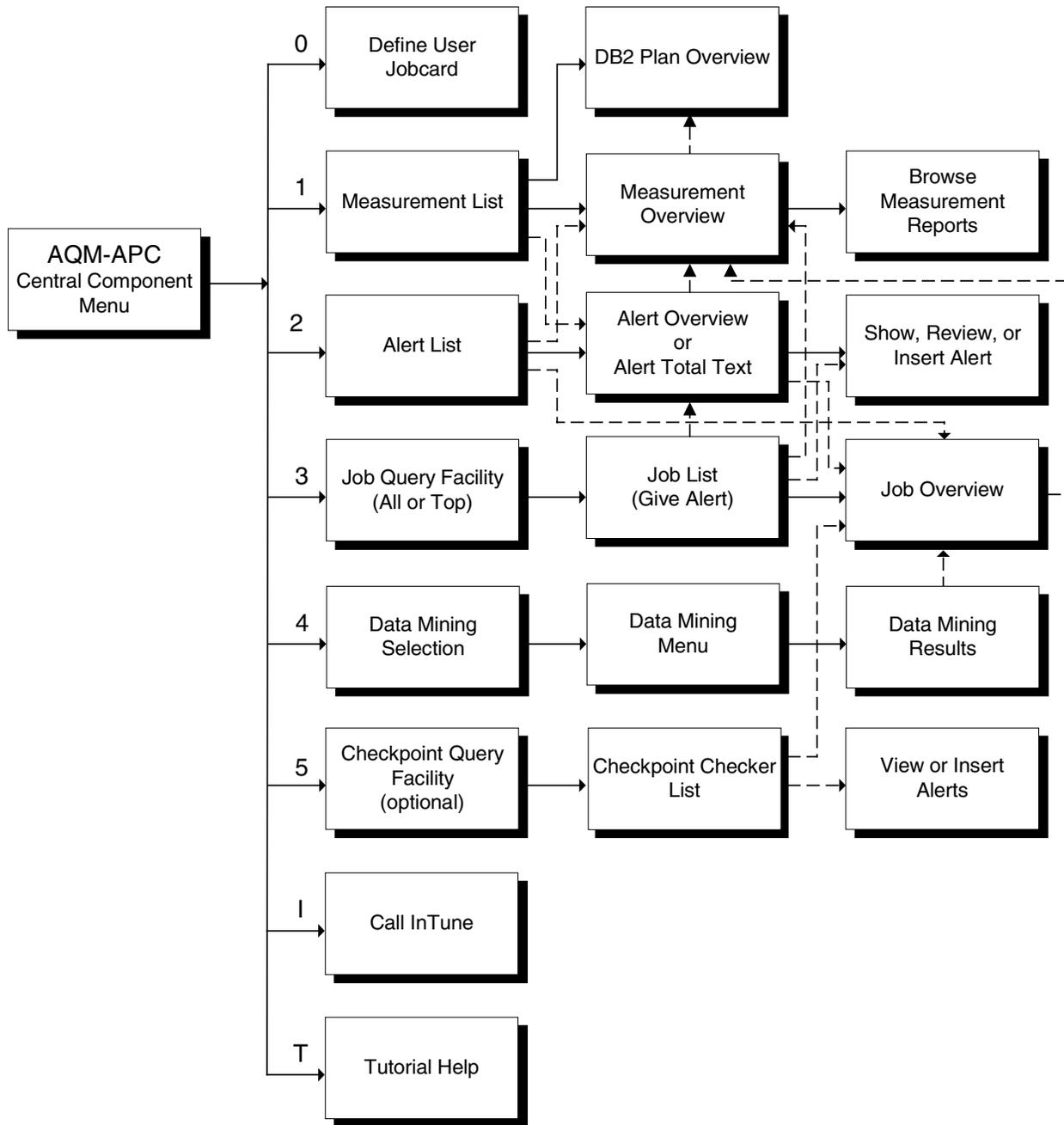


Figure 2: Panel Hierarchy of the Central Component

The Central Component Menu

The Central Component Menu is accessed by selecting option 1 on the AQM-APC Main Menu.

```

APCBP000 -- AQM-APC --- Central Component Menu ----- Version 4.3.0
OPTION  ===>

          0 PARAMETERS   - Define User Specific Jobcard
          1 MEASUREMENTS - List InTune Measurement Info (InTune Scope)
          2 ALERTS       - Manage Alerts
          3 JOBS         - Query Job Info (AQM-APC Scope)
          4 DATA MINING - Mine Data in InTune Measurements
          5 CHECKPOINT   - Check Checkpoint Writing
          I InTune       - Call InTune
          T TUTORIAL     - Obtain AQM-APC Help
          X or END      - End Central Component Dialog

(c)2002      A.P.M. AG. All rights reserved.
InTune is a registered trademark of BMC Software Inc.

```

Panel APCBP000: Central Component Menu

On the Central Component Menu, there are options that allow you to select the Central Component functions.

To use the **Central Component Menu** options, type the selection number in the OPTION field and press <ENTER>. The following selections are provided:

-
- 0** Define a user specific jobcard to be used for printing. See "Global Print JCL" on page 9. For details on how to define all other AQM-APC parameters, refer to the *AQM-APC Administrator's Guide*.
 - 1** View and work with performance measurements. See "Measurement Lists" on page 10.
 - 2** View alerts or create new alerts. See "Alert Management" on page 18.

The Show Chckp. Alerts option is displayed only when the Checkpoint Checker feature is enabled. In this case, one of the following values may be entered prior to selecting the Manage Alert option:

- Y** Display checkpoint alerts along with all other alerts.
- N** No checkpoint alerts should be displayed.
- O** Only checkpoint alerts should be displayed.

- 3** Use the job query facility to access specific performance information within the AQM-APC Scope of work. See "Job Query Facility" on page 30.
 - 4** Perform data mining within the InTune measurements. This option will cross reference stored measurement information based on your selection criteria. See "Data Mining" on page 37.
 - 5** Call the optional Checkpoint Checker Feature. If used, the Checkpoint Checker will provide immediate online support in determining whether the proper checkpoint writing exists for important job steps. See "Chapter 3. Using the Checkpoint Checker" on page 63.
 - I** Call InTune.
 - T** Browse the online tutorial to obtain help. Panel specific online help can be accessed by simply using <PF1> on any panel.
 - X** Exit the Central Component Menu and return to the AQM-APC Main Menu.
-

Global Print JCL

The following panel is displayed when you choose **0** on the Central Component Menu:

```

APCXPP01 --- AQM-APC - Global Print JCL -----
COMMAND ==>

Enter your user specific JCL statements used in all AQM-APC
features for Print:

//XXXXXXXXX JOB (5251,Z002,,FI-32),APM,CLASS=A,MSGCLASS=4,NOTIFY=XXXXXXXX
//*
//PRINT      EXEC  PGM=IEBGENER
//SYSIN      DD    DUMMY
//SYSPRINT   DD    SYSOUT=*
//SYSUT2     DD    SYSOUT=*
//SYSUT1     DD    *

                Cancel: CAN
                Save  : END OR PF3

```

Panel APCXPP01: Global Print JCL

Other options within the ISPF online of the Central Component will allow you to route information to print. Use this Global Print JCL panel to define the job card and JCL statements to be used when routing AQM-APC information to the printer.

Using the Panel

In the lines provided on this panel, define your print job statements. These statements may include:

- Job card
- Local printer
- Specific SYSOUT classes
- Print formats.

Once defined, this print job JCL is used by all AQM-APC features (Central Component, CICS Feature, and IMS feature). This JCL is stored in your individual TSO user profile pool. If you do not save the input to this panel by exiting with PF3 or END, the profile pool is not loaded.

Measurement Lists

Option 1, Measurements, of the Central Component Menu will display the Measurement List panel.

```

APCBP001 -- AQM-APC - Measurement List ----- Row 1 from 27
COMMAND ===>                                SCROLL ===> CSR

Jobname      : *                From date: 2002.03.20
Commands     : SORT J/D/E/C/W/ST/EX - Job/Date/Elpsd/Cpu/Wait/STret/EXcps
Line Commands: MO -Meas. Overview   AT -Alert Text   AO -Alert Ov.   JO -Job Ov.
               S - Show Measurement   SD -Show DB2 Plans

LC Jobname  Stepname Procstep Date          Time Meas  Elpsd CPU Wait Stret  Excps
-----
ABAG1426 ABPROC1  AMSTP01  2002.03.20 03:23 100    1    0    0    0    0
XL13567P          LBISBDA  2002.03.19 13:46 100    2    0    1    0    3
ZZEB1701 EBZZOC1  EBSTP04  2002.03.19 01:49 99     37   24    8    5    2
ZZVT1420 VTZZOC1  VTSTP01  2002.03.19 00:57 100    10   0    5    3   72
ZZJW1350 JWZZOC1  JWSTP01  2002.03.19 00:55 100    18   16    0    1   14
ZZLS1202 LSZZOC1  LSSTP01  2002.03.19 00:38 91     14   0   13    0   23
ZZGL1140 GLZZOC1  GLSTP03  2002.03.18 23:44 100    66   19   47    0   26
ZZCO1114 COZZOC1  COSTP01  2002.03.18 23:00 100    11   2    8    0   82
ZZCO1115 COZZOC1  COSTP01  2002.03.18 23:00 96     11   2    8    0   82
ZZCO1116 COZZOC1  COSTP01  2002.03.18 23:00 95     8    2    5    0   83
ZZCO1117 COZZOC1  COSTP01  2002.03.18 23:00 100    8    2    6    0   82
ZZKE1312 KEZZOC1  KESTP03  2002.03.18 22:55 99     15   5    7    2  172
ZZAP1AVS APZZOC1  APSTP02  2002.03.18 22:13 98     20   15    3    1    3
ZZRZ1893 RZZZOC1  RZSTP01  2002.03.18 22:12 100    94   8   68   17    1

```

Panel APCBP001: Measurement List

Every InTune measurement with an InTune data set name prefix that is the same as the one defined as an AQM-APC parameter will be processed by job APCYJNAR. The InTune Measurement Lists will be interpreted, filtered, compressed, and stored by AQM-APC. The list of these processed InTune measurements will be displayed on this Measurement List panel.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific measurement displayed in the list.

Type this: To do this:

MO	Displays the Measurement Overview panel.
AT	Displays the Total Alert Text panel.
AO	Displays the Alert Overview panel.
JO	Displays the Job Overview panel.
S	Displays the InTune performance measurement.
SD	Displays the DB2 Plan Overview panel.

Input Fields

Jobname

To control the list of measurements being displayed, enter an actual job name or a generic job name. Generic character asterisk '*' can be used to list all measurements for all job names or to limit the list of measurements to a generic group of jobs.

From Date

If you want to see the previous processing results of AQM-APC, enter the date you want to see the list from. The default is the last but one processing date.

Columns

Jobname/Stepname/Procstep

The job name, step name, and procedure step name of the InTune measurement.

Date/Time

Date and time of measurement.

Meas

Percentage of measurement time related to the job step elapsed time. If AQM-APC Server handles the InTune requests, a value less than 100 % is possible because the measurement is not necessarily taken during the entire time the job step executes.

Elpsd

Elapsed time in minutes consumed during execution.

CPU

CPU time in minutes consumed during execution.

Calculated Wait

Wait time in minutes consumed during execution. If the MEAS value is below 100%, the wait time is calculated by AQM-APC.

Calculated Stret

Stretch time in minutes consumed during execution. If the MEAS value is below 100%, the stretch time is calculated by AQM-APC.

EXCPs

EXCPs listed in thousands consumed during execution.

Measurement Overview

After selecting a job name with line command **MO** in any list panel, an overview of all stored measurements for the job is displayed.

```

APCBP011 -- AQM-APC - Measurement Overview ----- Row 1 to 5 of 5
COMMAND ===>                                     CSR

Line Commands: S - Show Measurement P - Print Measurement E - Edit Measurement
                SD - Show DB2 Plans

Jobname  Stepname Procstep
XX00145M      Q005

LC Date      Time      Comment Meas  Elpsd  CPU    Calculated
                Wait  Stret  EXCPs  SRVU
-----
2002.03.30  00:32      100    57    30     16     10     112  999,999
2002.03.05  03:27      100    92    53     23     15     112  999,999
2002.02.22  23:38      100    74    42     18     14     148  999,999
2002.02.05  23:42      100    37    23     13      0      91  999,999
2002.01.25  23:37      100    51    31     16      3     124 100,936
***** Bottom of data *****
    
```

Panel APCBP011: Measurement Overview

The Measurement Overview panel displays the cross reference list showing all existing measurements in AQM-APC that are available for a specific job step.

Using the Panel

Line commands can be used to work with a specific measurement displayed in the list.

Type this: **To do this:**

- S** Displays the InTune Measurement reports.
- P** Routes the measurement to the printer.
- E** Displays the report in the editor so that you can edit the measurement. For example, unwanted information can be deleted or your comments can be added.
- SD** Displays the DB2 Plan Overview panel.

Columns

Jobname/Stepname/Procstep

The job name, step name, and procedure step name of the InTune measurement.

Date

Date of measurement.

Time

Time of measurement.

Meas

Percentage of measurement time as related to the job step elapsed time, normally 100%. If the AQM-APC Server handles the InTune requests, a value less than 100 % is possible because the measurement of a job step does not necessarily occur during the whole job step execution.

Elpsd

Elapsed time in minutes consumed during execution.

CPU

CPU time in minutes consumed during execution.

Calculated Wait

Wait time in minutes consumed during execution. If the MEAS value is below 100%, the wait time is calculated by AQM-APC.

Calculated Stret

Stretch time in minutes consumed during execution. If the MEAS value is below 100%, the stretch time is calculated by AQM-APC.

EXCPs

EXCPs listed in thousands consumed during execution.

SRVU

SRVU listed in thousands consumed during execution.

Displaying InTune Measurements

An InTune measurement report is displayed as a result of one of the following actions:

- Line command **S** is used on the Measurement List panel to select measurements for a specific job name.
- Line command **S** is used on the Measurement Overview panel to select a specific measurement report date for a specific job name.

```

APCBP101 INTUNE(R) Meas. - SAMPLER AND JOB STATISTICS ----- Row 1 to 17 of 21
COMMAND ===>                                     SCROLL ===> CSR

Object   : C C/D - Chapter/Date                Direction: F F/B - Forward/Backward
Chapter  : #SJS                               Date: 2002.03.05   Job: XX170719 YY70T000 G418

SAMPLER STATISTICS
-----
MONITOR DATA SET:  TEMP.INT.IZE0100.PG170719.D2002064.T0333025
FINAL RATE:        40MSEC   START DATE: 2002/03/05   CICS LVL:  **N/A**
SAMPLES USED:      39683    START TIME: 03:33:02   DB2 LVL:   **N/A**
SAMPLE BALANCE:    1.12     ELAPSED:    00:13:05   IMS LVL:   **N/A**

JOB STATISTICS                                     SYSTEM STATISTICS
-----
JOBNAME:   XX170719          TCB TIME:    11.45      OS FMID:   SP6.1.0
STEPNAME:  YY70T000        SRB TIME:    12.92      CPU TYPE:  2064
PROCSTEP:  G418            ACTIVE%:     1.38       CPU MODEL: 00
PROGRAM:   G418            WAIT%:       98.16      SERIAL:    116D1
ASID:      0058 (88)       SWAPPED%:    0.00      SMFID:     BSP1
USER ID:   IZE0100        NONDISP%:    0.00      SYS NAME:  BSP1
JOB ID:    JOB02062       PROCDLY%:    0.45      OS NAME:   OS/390
                   <STORAGE:  2.109M      OS LVL:    02.10.00

```

Panel APCBP101: Sampler and Job Statistics

AQM-APC interprets each of the relevant InTune measurement reports. The information is limited to certain reports and only the important information is shown, see Table 1 on page 16.

By default, the Sampler and Job Statistics chapter is displayed first. However, to see other InTune measurement reports or chapters, a variety of paging alternatives is available. The normal PF keys for scrolling forward and backwards can be used. Additionally, the Object field, Direction field, and Chapter field can be used in combination to scroll through different measurement reports or chapters as defined below.

Input Fields

Object

Enter one of the following values to indicate whether paging should be by chapter or by date using the <ENTER> key. (These values may also be used in the COMMAND field.)

- C** Page through the InTune measurement reports by chapter. A forward direction (F) will page to the next chapter. A backward direction (B) will page to the previous chapter.

- D** Page by date through the same chapter. The chapter is identified in the Chapter field. A forward direction (F) will page to the next date for this chapter. A backward direction (B) will page to the previous date for this chapter.

Direction

Between chapters/dates of the current measurement/chapter:

F Page forward.

B Page backward.

Chapter

Displays the current InTune measurement report or chapter being reviewed. The default is #SJS - Sampler and Job Statistics. To display a different chapter, enter one of the following chapter IDs in the Chapter field (or without the # sign in the COMMAND field).

Table 1: List of InTune Chapters

Chapter ID	Description
#SJS	Sampler and Job Statistics
#RDC	Resource Demand Chart
#SAM	Sampler Messages
#TSV	Task View
#DLV	Delay View
#COV	Code View
#CVC	Code View Mode
#CVM	Code Mode Modul
#CVP	Code-View Mode Pseudo
#HIM	Histogram for Modules
#HT5	Histogram for Top 5
#DSA	Dataset Activity
#DDR	Detailed Dataview Report
#DBS	DB2 Statements
#DB2	DB2 Activity
#DBC	DB2 Code Detail
#SQL	SQL Statement Display
#IMS	IMS Activity
#TXV	Transaction View
#MOD	Module Table
#POV	Pool View
#SUM	Summary
#BRO	Batch Reporting Options
#SAM	Sampler Messages

DB2 Plan Overview

After selecting a job name with line command **SD**, the DB2 Plan Overview panel is displayed.

```

APCJP111 --- AQM-APC - DB2 Plan Overview ----- Row 1 to 3 of 3
COMMAND ==>                                     CSR

```

Jobname	Stepname	Procstep	Date
XXRZ1A1A	RZPROC1	RZSTP03	2002.03.30

LC Collection	Package/Plan	CPU time %
BAGLOB	GPI09FM	1.02
TEST	OTEK428	0.02
BADFZI	OTEK428	0.02

***** Bottom of data *****

Panel APCJP111: DB2 Plan Overview

The DB2 Plan Overview panel displays the count and CPU utilization percentage for all DB2 Plans in the selected job name, step name, and procedure step.

Columns

Collection, Package/Plan

Displays the name of the DB2 collection and package/plan.

CPU time %

Displays the consumed CPU time of SQL executions in the particular DB2 plan -- related to the total consumed CPU time for the job step.

Alert Management

Alert processing automatically identifies critical situations within a job step that require measurement by InTune. The alert can be automatically issued by AQM-APC because it recognizes these situations:

- Current execution consumption values exceed the statistical limits for a particular job step.
- A scheduled job step is calling a changed module.

Additionally, the AQM-APC user can manually issue alerts explicitly for job steps using the online Alert Management option.

The Alert Management option provides all the necessary information for the APM Team to handle the alert. A lot of information is provided in the form of state and reason codes that identify the situation. The following table provides a description of these codes:

Table 2: Alert Overview

State Code	Reason Code	Long Description
PEND		AQM-APC will provide an InTune measurement. A measurement will be available if the alert state is changed to OPEN.
	ELPS SRVU	Created by job APCBJSMF as a result of statistical calculations.
	MODC	Created by job APCXJLIB as a result of a changed module.
	USER	Created by an AQM-APC online user.
OPEN		AQM-APC has information about an alert, either an InTune measurement or user Text.
	ELPS SRVU MODC USER	The state was changed from PEND to OPEN by job APCXYNAR for one of the following reasons: <ul style="list-style-type: none"> • An InTune measurement existed for a job step that was in the TOP Scope and had exceeded its statistical limits. • A measurement was stored in any case by user definition. No further alerts will be created except those of changed modules.
	TEXT	Created by an AQM-APC online user to indicate that no measurement was requested; however, user text information was provided.
	CHCK	An AQM-APC user has initiated an alert for checkpoint writing.
REV		An AQM-APC online user selected an alert for review/inspection.
	all	State was changed by an AQM-APC online user by using command R(eview) in the Alert List Panel. No further alerts will be provided by AQM-APC.
CUSE		An AQM-APC online user closed the alert.
	all	State was changed by an AQM-APC online user by using command C(lose) in the Alert List Panel.

CTHR		AQM-APC closed the alert automatically. No measurement is provided.
	ELPS SRVU MODC USER	State was changed by job APCYJNAR because the measured job step abended or an InTune Scope change has affected a PEND alert.
CIMP		AQM-APC closed the alert automatically. No measurement is provided.
	ELPS SRVU MODC	State was changed by job APCYJNAR because the consumption values of the measurement did not exceed the statistical based alert values or a TOP Scope change affected a PEND alert.
CMUL		AQM-APC closed the alert and temporarily stopped further alerts automatically.
	ELPS SRVU MODC	State was changed by job APCYJNAR because more than three contiguous alerts with CTHR or CIMP were detected. No further InTune measurements will be provided until a module change is detected or an online user uses the D(elete) command in the Alert List Panel.
COVT		An AQM-APC online user closed the alert and took over the statistical data.
	ELPS SRVU	State was changed by an AQM-APC online user by using the overtake command "O" in the Alert List panel. In this case, the runaway values will be the new statistical base for future tests.

Using the TOP Scope

Within the scope of work defined through inclusions and exclusions of job names and programs, the scope is further drastically reduced by the TOP Scope. The TOP Scope facility identifies the job steps consuming the greatest resources and limits InTune measurements to this group.

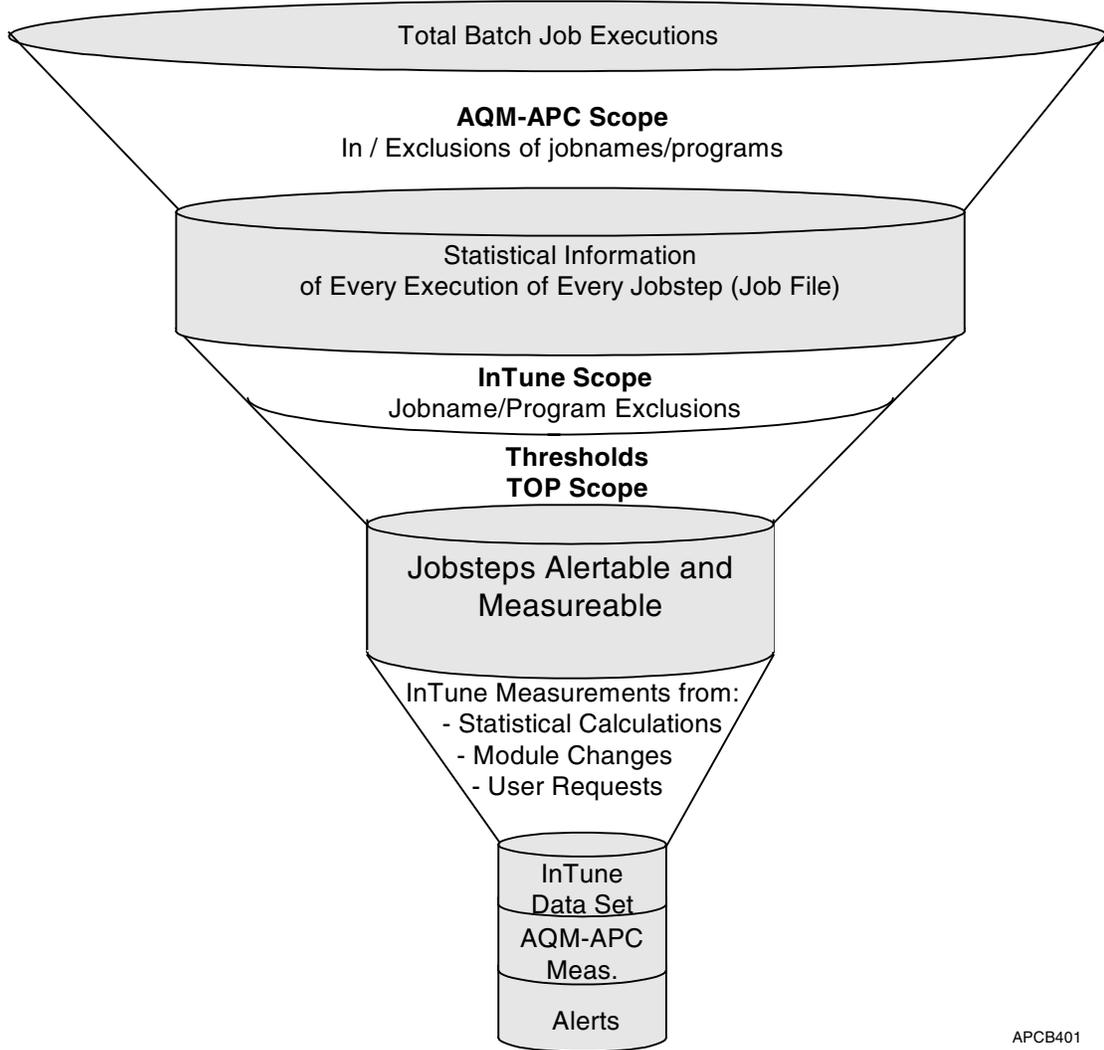
The TOP Scope parameter is maintained by the AQM-APC administrator. It may be a value from 0 - 999. A value of 0 indicates that the statistical alert approach is disabled. In all other cases, the TOP Scope defines how many important job steps should be statistically observed.

Refer to the *AQM-APC Administrator's Guide* for details on the processing logic which determines whether a job step is among the top resource consumers. Statistical alerts and InTune measurements are limited to the members of this group of top consumers.

The TOP Scope can be used to control:

- Initiation and number of generated OPEN statistical alerts.
- Generated alerts for all modified and new modules. Refer to the *AQM-APC Administrator's Guide* for details on defining these parameters.
- How user alerts, initiated via the online dialog, are handled. User defined alerts that request measurements may use the TOP Scope. If used, only job steps of user alerts that are in the TOP Scope will have OPEN alerts and their measurements will be stored. See "Inserting an Alert" on page 28.

The following figure illustrates how the batch scope reduction works:



APCB401

Figure 3: How AQM-APC Batch Scope Reduction Works

Listing All Alerts

To list all alerts, select option **2** on the Central Component Menu to display the following panel.

```

APCBP002 -- AQM-APC - Alert List -- All Issued ----- Row 1 from 608
COMMAND ===>                                     SCROLL ===> CSR

Jobname      : *                               State: *
Commands     : SORT S/A/D/R/J/M/U - State/Aid/Date/Reason/Jobname/Module/UserID
              : REV -list review OPEN -open ALL -issued RECENT -most recent
Line Commands: AT -Alert Text AO -Alert Overview JO -Job Ov. MO -Meas. Ov
              S -Show R -Review C -Close D -Delete I -Insert O -Overtake

LC Jobname  Stepname Procstep Module  State Reas. AID IssueDate No.Al. UserID
-----
  XX130000 F130BS08 F130      F130    PEND MODC    34 2002.02.12    1
  XXUX244X          A080      A080    PEND MODC     1 2002.02.12    1
  XXUX244X          F509      F509    OPEN MODC   330 2002.02.26    1
  XXE0046F F259SET  F259GO  F259    PEND MODC    40 2002.02.12    1
  XXE0046T          F639GO  F639    PEND MODC    61 2002.02.12    1
  XXE0046T          F640GO  F640    PEND MODC    62 2002.02.12    1
  XXE1404A          NTPS01   NTP      CIMP SRVU   634 2002.03.28    1
  XXS0240P          A133     A133    PEND USER   494 2002.03.06    1
  XX00016N          NAT1     NATBAT  PEND SRVU   627 2002.03.27    1
  XX00061A          A300     A300    PEND USER   495 2002.03.06    1
  XX00258F F997PROC F661     F661    PEND MODC    70 2002.02.12    1
  XX00273J          S10      IKJEFT01 PEND USER   496 2002.03.06    1
  XX00273Q          SQL01    IKJEFT01 PEND USER   497 2002.03.06    1

```

Panel APCBP002: Alert List

Use the Alert List panel to see an overview of all alerts along with all possible state codes and reason codes. The state code identifies the current state of the alert, e.g., whether the alert is open, pending, closed, etc. The reason code identifies why the alert was issued, e.g., module was changed.

Using the Panel

- To filter the data listed on the panel, use the Jobname and/or State fields as described below in the Input Fields section.
- Primary commands can be used as follows:

Type this: To do this:

REV View alerts with STATE = REV.

OPEN View alerts with STATE = OPEN.

ALL View all alerts.

RECENT View the most recent occurrence of each alert.

SORT If you need details regarding how to use SORT commands, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific alert displayed in the list.

Type this: To do this:

AT	Display the Total Alert Text panel.
AO	Display the Alert Overview panel.
MO	Display the Measurement Overview panel.
JO	Display the Job Overview panel.
S	Show the Alert.
R	Review and edit the Alert text. The state is changed to REV.
C	Close an Alert. The state is changed to CUSE and can no longer be reviewed.
D	Delete an Alert.
I	Insert a new Alert. For more information, see "Inserting an Alert" on page 28.
O	Overtake the consumption values of this alert. The state is changed to COVT and the runaway consumption values become the basis for future tests.

Input Fields

Jobname

To control the list of alerts being displayed, enter an actual job name or a generic job name. Generic character asterisk '*' can be used to list all alerts for all job names or to limit the list of alerts to a generic group of jobs.

State

To reduce the list of alerts to a specific state, enter the state of the alerts to be displayed. You can enter a valid state code, the first letter of the state code plus an asterisk, or an asterisk alone to see all states of alert.

For a complete list of all state codes, see "Table 2: Alert Overview" on page 18.

Columns

Jobname/Stepname/Procstep/Module

The specific job name, step name, procedure step name, and module for which the alert is issued. The module name is the application module name if available. Otherwise, it is the JCL PGM name.

State

The current state of the alert. For a complete list of all state codes, see "Table 2: Alert Overview" on page 18.

Reason

The current reason for the alert. The following reason codes are valid:

Table 3: Alert Reason Codes

Reason Code	Short Desc.	Long Description
USER	User	An AQM-APC user initiated an alert.
ELPS/SRVU	Elapsed time/ Service units	The alert resulted from a statistical calculation of consumption values for elapsed time or service units.
MODC	Module Changed	A changed module was detected. The alerted job step is the one that most recently executed the changed application program. If more than one job step executes the changed module, the most important one is selected.
TEXT	Text only	If no measurement is requested, a user can perform a text only alert. See "Inserting an Alert" on page 28 for details on creating a text only alert.
CHCK	Checkpoint Writing	An AQM-APC user initiated an alert for checkpoint writing. No measurement is requested.

AID

A unique alert identification is given to each alert.

Issue Date

The date the alert was issued.

No. Al.

The number of alerts for this job step. If more than one alert exists for this job step and you want to delete them all, each alert must be individually deleted using line command **D**.

Alert Overview

The Alert Overview panel is displayed as a result of one of the following actions:

- Line command **AO** is used to select a job name on any List panel.
- Line command **D** is used to delete the alert for a specific job *and* there is more than one alert issued for the job step.

```

APCBP021 -- AQM-APC - Alert Overview ----- Row 1 to 1 of 1
COMMAND ==>                                SCROLL ==> CSR

Line Commands: MO - Measurement Overview JO - Job Overview
                S -Show Alert R -Review C -Close D -Delete I -Insert

Jobname  Stepname Procstep
XX130000 F130BS08 F130
-----
LC   No   State Reason  AID   Issue Date      Module   Link Date
-----
    2   CUSR  SRVU   26617  2002.03.07     P3AM426  2002.04.15
    1   CUSR  SRVU   25622  2002.02.17     P3AM426  2002.04.15
***** Bottom of data *****
    
```

Panel APCBP021: Alert Overview

The Alert Overview panel lists each alert issued to a specific job step.

Using the Panel

Line commands can be used to work with a specific transaction displayed in the list.

Type this: **To do this:**

- MO** Displays the Measurement Overview panel.
- JO** Displays the Job Overview panel.
- S** Show the Alert information text.
- R** Review and/or edit the alert text. The state is changed to REV.
- C** Close an Alert. The state is changed to CUSE and the alert can no longer be reviewed.
- D** Delete an Alert.
- I** Insert a new Alert.

Fields

Jobname/Stepname/Procstep

The specific job name, step name, and procedure step name for which the alert is defined.

Columns

No

The alert number.

State

See "Table 2: Alert Overview" on page 18.

Reason

See "Table 3: Alert Reason Codes" on page 23.

AID

A unique alert identification is given to each alert.

Issue Date

Create date of the alert.

Module

The module name for which the alert is issued.

Link Date

Linkage date of the application program.

Show or Review Alert

To display the Alert Text panel, use line command **S** or **R** to select a job step name on the Alert List panel or Alert Overview panel. Selecting this panel with line command **S** allows you to only view the alert. If you want to edit the alert text and change the STATE to REV, use line command **R**.

```

APCBP201 Q004711.APCX.TEMP1 ----- Line 00000000 Col 001 080
COMMAND ==>                                SCROLL ==> CSR
SAVE = END command or PF3          CANCEL = CAN command
Jobname Stepname Procstep  Module  Alerts  State  Reason  AID  Link Date
XXIDMPPJ DISTJA12 D4          DUMPSEL3    1    CIMP   SRVU   648
-----
***** Top of Data *****
2002-03-28 APC ALERT ID 00648   BY SRVU
-----
          JOB: XXIDMPPJ DISTJA12 D4          PGM: DUMPSEL3
          EXEC: 2002-03-27  2:00  SYS: BSP1          CC: 0000
          CPU: 00000  ELPSD: 00000  EXCPS: 000001  SRVU: 000014  I: 04
          -----
2002-04-08 APC AUTOMATIC CLOSE BY IMPORTANCE UPGRADE
-----
***** Bottom of Data *****

```

Panel APCBP201: Show/Review Alert

The Show/Review Alert panel details the alert situation for the specific job step by displaying all information that has been:

- Created automatically by AQM-APC, or
- Documented by the user.

The alert is identified by the job name, step name, procedure step, and module. Additionally, the number of alerts, status code, reason codes, identifier, and creation date are listed.

Using the Panel

- In Review mode (line command **R**), you are allowed to edit text up to the maximum of 102 lines. The text is saved in the AQM-APC database. It is available anytime for display or for documenting additional information. The text is erased if you use the delete command for the alert on either the Alert List panel or the Alert Overview panel. The alert state is changed to REV when it is reviewed using line command **R**.
- To cancel changes, use the CAN (cancel) command. Changes in the text will be ignored and the state of the alert will not be changed to REV.

Total Alert Text

To display the Total Alert Text panel, use line command AT on the following panels:

- Measurement List panel.
- Alert List – All Issued panel.
- Job List panel.

```

APCBP022 -- AQM-APC - Total Alert Text----- Row 1 to 10 of 10
COMMAND ==>>                                SCROLL ==>> CSR

No.      Jobname  Stepname Procstep
Alert    PCIDMPPJ  DISTJA12 D4
-----
1        CIMP
1        2002-03-28 APC ALERT ID 00648      BY SRVU
1
1        -----
1        JOB: PCIDMPPJ DISTJA12 D4          PGM: DUMPSEL3
1        EXEC: 2002-03-27  2:00  SYS: BSP1          CC: 0000
1        CPU: 00000  ELPSD: 00000  EXCPS: 000001  SRVU: 000014  I: 04
1        -----
1        2002-04-08 APC AUTOMATIC CLOSE BY IMPORTANCE UPGRADE
1        -----
***** Bottom of data *****

```

Panel APCBP022: Total Alert Text

Use the Total Alert Text to see a complete historical overview of all alerts and all alert text for one job step.

Inserting an Alert

The New User Alert window is opened when a job is selected on the 1) Job List panel using line command **A** or 2) on the Alert List panel using line command **I**.

```

APCBP002 --- AQM-APC - Alert List - All Issued ----- Row 35 from 1743
COMMAND ===>                                     SCROLL ===> CSR

Jobname      : *                               State: *
Commands     : SORT S/A/D/R/J/M - State/Aid/Date/Reason/Jobname/Module
              : REV -list review OPEN -open ALL -issued RECENT -most recent
Line Commands: AT -Alert Text AO -Alert Overview JO -Job Ov. MO -Meas. Ov
              S -Show R -Review C -Close D -Delete I -Insert O -Overtake
    
```

LC	Jobname	APCBPIAL New User Alert				AID	Issue Date	No.Al.
I	PRPA4406	Jobname	Stepname	Procstep		1863	2002.01.27	6
	PRPA4406	PRPA4406	PAPROC1	PASTP02		1862	2002.01.27	1
	PRPA4315					1861	2002.01.27	1
	PRPA4041					1860	2002.01.27	1
	PRPA4SA1	Use TOP Scope		: Y		1859	2002.01.27	1
	PRPA1520	InTune Measurement Request:		Y		1858	2002.01.27	1
	PRPA119U					1857	2002.01.27	2
	PRPA118U					1856	2002.01.27	2
	PRPA117U	PAPROC1	PASTP02	DFSRR00	PEND USER	31855	2002.01.27	2
	PRPA115U	PAPROC1	PASTP02	DFSRR00	PEND USER	31854	2002.01.27	2
	PRPA114U	PAPROC1	PASTP02	DFSRR00	PEND USER	31853	2002.01.27	2
	PRPA113U	PAPROC1	PASTP02	DFSRR00	PEND USER	31852	2002.01.27	2
	PRPA112U	PAPROC1	PASTP02	DFSRR00	PEND USER	31851	2002.01.27	2

Panel APCBPIAL: New User Alert Window

The New User Alert window displays the job and step name you have selected as a user alert.

Using the Window

- To generate an InTune measurement request the next time the job is scheduled, enter **Y** in the InTune Measurement Request field. An alert with state code **PENDING** and reason code **USER** will be generated..
- To apply the TOP Scope logic following an InTune measurement, enter **Y** in the Use TOP Scope field. (The InTune Measurement Request field must also be **Y**.) If the measured job step is in the TOP Scope, the alert state code will be changed from **PEND** to **OPEN** and the measurement will be stored. If the job step is not in the TOP Scope, the alert will be implicitly closed (state code changed to **CIMP**) and the measurement will not be stored. If **N** is entered in the Use TOP Scope field, all measurements will be stored and the alert state code will be **OPEN**.
- To create a text only alert with state code **OPEN** and reason code **TEXT**, enter **N** in the InTune Measurement Request field. A text only alert allows you to document a special event or performance tip for a specific job step **without** generating an InTune measurement request.

- To create a new alert for the displayed job name, step name, and procstep, press <ENTER>. A subsequent panel will allow you to document the alert by entering up to 102 lines of text.
- To close this window without creating a new alert, press END or PF3.

Job Query Facility

The Job Query Facility allows you to query performance information based on the job selection criteria that you define. To access the Job Query Facility panel, select option 3 on the Central Component Menu.

```

APCBP003 -- AQM-APC - Job Query Facility -----
COMMAND ===>

Select job steps from: ALL ( ALL / TOP 1000 of Importance)

Jobname  Stepname Procstep PGM/JCL  PGM/Appl  From Date  Average values
Occured  Elpsd     Srvu
-----
                2002 01 01  0,000  00,000
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!  YYYY MM DD  Min. Thousand
Define query criteria using _ as a wild card          define date  define minimum
                                                       consumption

Any combination of selection criteria can be defined.

```

Panel APCBP003: Job Query Facility

The Job Query Facility panel allows you to define job selection query criteria for all information available within the AQM-APC Scope of work.

AQM-APC has two approaches to identifying jobs with performance problems:

- **ALL Approach** – All job steps defined in the AQM-APC Scope of work are considered.
- **TOP Scope Approach** – TOP Scope approach is based on the number of most important job steps which may be defined by the user, e.g., top 50, top 100, etc. This approach provides you with the top job steps most likely in need of tuning. For fire fighting purposes, you can focus on a lower number of top consuming steps. Raising the number allows you to then focus on prevention.

Internally, AQM-APC assigns an identifier that represents the importance of a job step. This number is a number from 0 – 50 where 0 is least important. Each day that AQM-APC processes SMF 30 records (subtype 4), a new importance identifier is calculated.

The Job Query Facility works as follows:

- The job steps to be selected can be defined as ALL or TOP number of steps.
- All input fields can be defined as you would in other query languages using the LIKE command.

- The underscore '_' is used as a wildcard to represent one character.
- All selection criteria are used in combination with logical AND's.
- The average values for elapsed time in minutes and service units in thousands are used in a "greater compare". Therefore, all job steps that consumed more than the specified values will be selected.
- If the results panel exceeds 4000 rows, you must define more specific selection criteria.

☞ **Note:** The PGM/APPL criteria field contains the application program name, e.g., the program called in the JCL (field PGM/JCL) is the IMS region controller DFSRRC00 but your application name is ZZ01IN28. This information is provided by job APCXLIB. For best results, carefully provide the parameter values when defining Standard Programs, Standard Procedures, Job Libraries, and Procedure Libraries. For more information on these parameter values, refer to the *AQM-APC Administrator's Guide*.

Using the Panel

1. Define "Select Jobsteps From" and query selection criteria.
2. Press <ENTER> to start the query. The query facility will search for rows that match your criteria. If 4000 rows are exceeded, you will be notified and should define more specific selection criteria.
3. The information that is found will be displayed on the Job List panel, see "Displaying Job Query Results" on page 32.

Displaying Job Query Results

After entering your job query selection criteria on the Job Selection panel, the results are presented on the Job List panel.

```

APCBP031 -- AQM-APC - Job List ----- Row 3 from 1000
COMMAND ==>                                SCROLL ==> CSR

Jobname      : *                               State : *
Commands     : SORT J/PJ/PA/O/A/E/S/I - Job/PgmJCL/PgmA/Occu/Alert/Elp/Srvu/Imp
              : BULK ALERT - Generate USER Alerts for ALL DISPLAYED job steps
Line Commands: JO -Job Overview  MO -Meas. Ov.   AT -Alert Text  AO -Alert Ov.
              A - Give Alert

LC Jobname  Stepname Procstep PGM/JCL  PGM/Appl Recently  Alert      Average  Im
              occured  State Elpsd   Srvu po
-----
XXCM2616    ZX0100  IKJEFT01    2002.02.11 OPEN      173 272804 27
XXCM2719    ZX0100  IKJEFT01    2002.02.11 PEND      186 287455 27
XXSMFSIP    SMFSAVE IFASMFDP  IFASMFDP  2002.03.28      64 27716 26
XXCM2212    ZX0100  IKJEFT01    2002.02.11 OPEN      169 249971 26
XXCM2412    ZX0100  IKJEFT01    2002.02.11 PEND      176 253778 26
XX51RECY    RECYCLE SVTRCYCL  2002.02.27 PEND      192 19095 25
XXD00219    SAVEFULL ADARUN      2002.02.25 PEND      165 17055 25
XXD00219    MERGFULL ADARUN      2002.03.28      370 33260 25
XXCM2411    ZX0100  IKJEFT01    2002.02.11 PEND      111 168453 25
XXCM2416    ZX0100  IKJEFT01    2002.02.11 PEND      112 157002 25
XXCM2719    ZL0100  IKJEFT01    2002.02.11 PEND       70 211344 25
XXCM2811    ZX0100  IKJEFT01    2002.02.11 PEND       95 144763 25

```

Panel APCBP031: Job List

The Job List panel displays the results of your job selection query. In addition to allowing you to display other familiar panels, the Job List panel has alert options that allow you to view and create alerts.

Using the Panel

- To generate a USER alert for all of the job steps that are displayed, enter BULK ALERT on the COMMAND line. The Bulk Alert Text panel will be displayed, see "Generating a Bulk Alert" on page 34.
- To filter the jobs to be displayed by state, e.g., display only job steps with State = OPEN, enter the state code in the State field.
- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific job step displayed in the list.

Type this: To do this:

JO	Display the Job Overview panel.
MO	Display the Measurement Overview panel
AT	Display the Total Alert Text panel
AO	Display the Alert Overview
A	Give an Alert. See "Inserting an Alert" on page 28.

Columns

Jobname/Stepname/Procstep/PGM/JCL/PGM/Appl

Displays the results based on your selection criteria for these fields.

Recently Occurred

The most recent occurrence date taken from SMF or, if not available, the first date detected by the job library scan (APCBAJCL).

Alert State

Indicates the alert state of the job step. If the job step is not within the InTune Scope, the alert state is marked with EXCL, meaning it is excluded. All other alert states are detailed in "Table 2: Alert Overview" on page 18.

Average Elpsd

Actual average elapsed time consumption in minutes.

Average Srvu

Actual average service units consumed in thousands.

Impo

An identifier that represents the importance of a job step. This is a number from 0-50 where 0 is least important. Each day SMF records (30 subtype 4) are processed, a new importance identifier is calculated. For details on how the importance is calculated, see the "importance" calculation documented in the *AQM-APC Administrator's Guide*.

Generating a Bulk Alert

After entering the BULK ALERT primary command on the Job List panel, the following Bulk Alert Text panel is displayed.

```

APCBP302 -- AQM-APC - Bulk Alert Text -----
COMMAND ===>

The Bulk Alert process creates a PEND USER alert for each job step that
was listed on the previous Job List panel. If a measurement already exists
for a job step, i.e., indicated by the most recent alert, no new alert
will be generated.

No. of automatically generated alerts: 1001

Enter the alert text that will be commonly used for this bulk alert.

                                     CANCEL Process: CAN
                                     START  Process: END or PF3

```

Panel APCBP302: Bulk Alert Text

A bulk alert is a user alert that has been created for an entire listing of job steps. The job step listing is created using the Job Query Facility.

Using the Panel

1. In the lines provided, enter the explanation text for the bulk alert.
2. Press <END> to display the following Bulk Alert Confirmation window:

```

APCBP303 --- AQM-APC - Bulk Alert Confirmation -----

An alert will be generated for all 1001 selected job steps.
There is no undo capability available.

Do you want to confirm this bulk alert: Y (Yes,No)

```

3. Confirm the bulk alert by entering a **Y** in the confirmation field. To cancel the bulk alert, enter an **N** in the confirmation field. Press <ENTER> after typing Y or N.

After confirming the bulk alert, an alert with State=PEND and Reason=USER will be generated for each job step listed on the Job List panel.

Note: If a measurement already exists for a job step, a new alert will not be generated.

Job Overview

To display the Job Overview panel, use line command **JO** to select a specific alert on either the Alert List panel, the Alert Overview panel, the Measurement List panel, or the Job List panel.

```

APCBP301 -- AQM-APC - Job Overview ----- Row 1 to 6 of 6
COMMAND ===>                               SCROLL ===> CSR

Line Commands: MO - Measurement Overview

Jobname  Stepname Procstep PGM/JCL  PGM/Appl
XXCM2616      ZX0100  IKJEFT01
Valid average   Statistical   Condition code  Im      Average values   Statist.
calculations    alerts           exceptions      po      Elpsd      Srvu      state
              6           0                0       27       173      272,804

-----
LC Date      Time      Cond  System      CPU  EXCPS  Elpsd      Srvu      Alert
-----
2002.01.26  15.29    0000  BSP1          49   1,292   163      280,730
2002.01.18  22.16    0000  BSP1          50   1,287   171      287,299
2002.01.07  12.48    0000  BSP1          53   1,292   211      283,217
2002.12.05  01.49    0000  BSP1          50   1,276   188      286,226
2002.11.15  23.15    0000  BSP1          44   1,265   148      254,274
2002.10.09  21.25    0000  BSP1          43   1,253   154      245,081
***** Bottom of data *****

```

Panel APCBP301: Job Overview Panel

The Job Overview panel displays the AQM-APC statistical values gathered and calculated plus detailed information about the last 10 job step executions. This information on this panel is divided into two parts:

1. In the approximate middle of the panel, the statistics are displayed. See the Statistics section below for a detailed explanation of each statistic.
2. In the lower half of the panel, the detailed information of the 10 most recent executions of the job step. See the Columns section below for a detailed explanation of each column.

Using the Panel

Use line command **MO** to display the Measurement Overview panel.

Statistics

Valid average calculations

The number of job step executions that were used for the average value calculation in AQM-APC.

Statistical Alerts

The number of alerts for this job step.

Condition code exceptions

The number of job step executions with a condition code greater than 4. For more information, refer to the *AQM-APC Administrator's Guide*.

Average values Elpsd

The AQM-APC calculated average elapsed time in minutes.

Average values Srvu

The AQM-APC calculated average service units in thousands.

Alert State

Displays if this job step has the state ALERTED.

Columns

Date/Time

The date and time the job step execution was started.

Cond

The condition code of the terminated job step.

System

The name of the MVS system the job step was executed on.

CPU

The amount of consumed CPU time in minutes.

EXCPs

The number of consumed EXCPs in thousands.

Elpsd

The amount of consumed elapsed time in minutes.

Srvu

The number of consumed service units in thousands.

Alert

The kind of alert, either ELPS, SRVU, or OVRTAKE.

Data Mining

Data Mining allows you to easily and quickly pinpoint high consuming objects for performance tuning. These objects include application programs, system programs, DB2 plans, and subsystems. With Data Mining, you can search and cross reference stored measurement information using a Data Mining Scope, which is your user defined selection criteria for job steps. The most current measurement information of a job step matching the scope will be accumulated and made available for cross referencing. For example, based on annual CPU consumption, you can spot the top consuming application programs within your scope and then use a simple cross reference command to list all job steps using that application.

The results of two important AQM-APC calculations are presented for all tuning objects:

- **Annual Frequency** - Statistical information about job steps is collected from SMF and the AQM-APC Server. For all tuning objects, AQM-APC uses this historical statistical information to calculate the Annual Frequency. For example, assume Data Mining has determined that a certain application program is used in 12 different job steps. The application program's Annual Frequency will be computed as the average number of annual executions of these 12 job steps. If a job step was not observed for a whole year, an approximate value will be calculated. In any case, the Annual Frequency does not represent the number of calls (for example, to an application program). Instead, the Annual Frequency is based on the number of related job step executions.
- **Annual CPU Consumption** - For all tuning objects, AQM-APC will calculate the annual CPU consumption. For example, assume Data Mining finds a specific application program in 12 different measurements, i.e., job steps. The CPU consumption from each of the 12 measurements will be multiplied by the annual frequency of the related job step. The 12 individual calculations are added together to provide the Annual CPU Consumption of the specific application program.

The calculation of the Annual CPU consumption is based on the measurements. Therefore, the results are influenced by:

1. The number of measurements available in AQM-APC and how much of the TOP Scope is covered by the measurements.
2. The age of the measurements.
3. The Data Mining Scope definitions.
4. Changes in hardware or software releases.
5. Heterogeneous MVS systems in a SYSPLEX.

AQM-APC should process for three months prior to using the Data Mining feature. This allows time for AQM-APC to gather statistical information from SMF and the APC-Server, which is used for execution frequency calculations and summations.

Defining the Data Mining Scope

To access the Data Mining Selection panel, select option 4 on the Central Component Menu.

```

APCBP005 -- AQM-APC - Data Mining Scope -----
Define the Data Mining Scope.

Only the most recent measurement of each job step stored in AQM-APC is used
for the Data Mining process.

Any combination of selection criteria can be defined.

Enter an option ==>
                1 Measurements of all job steps
                2 Measurements of all 1000 job steps of the TOP Scope
                3 Measurements of the first 100 job steps in alpha order

Additional criteria to define the Data Mining Scope, combined with logical AND.

Jobname          PGM Name          From Date          Job
                  _____          occurred          Importance
-----
_____          _____          1999 01 01          00
_ is used as wild card          YYYY MM DD          Lower limit

```

Panel APCBP005: Data Mining Selection

The Data Mining Selection panel allows you to define the Data Mining Scope. Defining the scope consists of entering the type of measurements to be considered and optionally defining additional search criteria to limit the measurements to specific job names, program names, dates, and/or importance.

Using the Panel

1. In the option field, select the Data Mining Scope by entering one of the following option numbers:

Type this: **To do this:**

- 1 Select measurements of all job steps stored in AQM-APC.
 - 2 Select measurements of only the job steps that belong to the TOP Scope. For details regarding the TOP Scope, see "Using the TOP Scope" on page 19.
 - 3 Select measurements of the first *nnn* job steps in alphabetical order where *nnn* is a value between 1 and 999.
2. To optionally filter the data that is mined, enter specific search criteria as follows.

Jobname Job name of relevant job steps using underscore as a wildcard placeholder.

PGM Name Name of relevant programs using underscore as a wildcard placeholder.

From date occurred Oldest creation date of relevant measurements.

Job Importance Lower limit of job importance (see job file).

The restriction criteria are combined with logical AND.

3. Press <ENTER> to perform the search. The Data Mining Menu will be displayed. If the mining process requires more than 5 seconds, "in progress" updates will be displayed until it is completed.
4. If the message "4000 rows exceeded" is displayed, you should perform step 2 (again) to limit the search.

The Data Mining Menu

After the Data Mining process is completed, the following Data Mining Menu is displayed.

```

APCBP051 --- AQM-APC --- Data Mining Menu -----
Enter an Option ==>
                1 Application Program Info      2,167
                2 System Program Info          498
                3 SubSystem Info                20
                4 DB2 Plan Info                 569
                5 Job Step Info                 670

=====

Selected Data Mining Scope

=====> - Measurements of all job steps
        - Measurements of all 999 job steps of the TOP Scope
        - Measurements of the first 100 job steps in alphabetic order

Jobname          PGM Name          From Date          Job
                _____          _____          occured           Importance
-----
Z_____          _____          1999 01 01          00
_ is used as wild card          YYYY MM DD          Lower limit

```

Panel APCBP051: Data Mining Menu

On the top half of the panel is a menu that represents five results tables in which all entries matching your Data Mining Scope are stored. For each table, the total number of entries is listed. The job step information pertaining to the first four tables can be cross referenced to the related job steps. Otherwise, all job steps can simply be listed by selecting the fifth table.

On the bottom half of the panel, the selected Data Mining Scope is indicated with an arrow and the search criteria are displayed.

Using the Panel

1. In the Enter an Option field, type the results table number to be displayed.
2. Press <ENTER> to display a panel on which the corresponding data mining results are listed.

Data Mining Application Programs

To list all application programs found within the Data Mining Scope, enter option 1 on the Data Mining Menu.

```

APCBP501 --- AQM-APC - Data Mining Application Programs --- Row 1 to 16 of 561
COMMAND ===>                                SCROLL ===> CSR

Commands      : SORT N/C/F/J   - Name / Cpu / Frequency / No. Job steps
Line Commands: XJ -Xref Job step   SS -Significant Statements

LC Appl PGM      Annual      Annual      No. of
                  CPU         Frequency   Job Steps
-----
  XXWV061         7,077           182           1
  XXS3471         6,047           143           1
  XBXTREE         2,161           146           1
  YOKP041         2,136           318           2
  DMPK112         1,261           1,226         14
  ZFWV071         901             201           1
  ZZ000C1         819             386           2
  ZZKP061         761             318           2
  ZZXSADL         752             177           1
  YLP1011         722             185           1
  YLZ81Z1         709             123           1
  YVTT#01         622             322           2
  XLM2421         530             185           1
  XVTD#31         470             322           2
  YOKP021         452             318           2
  YGL0202         443             168           2

```

Panel APCBP501: Data Mining Application Programs

All application programs belonging to the most current measurements of job steps within the Data Mining Scope are listed. Use the panel to spot programs with high annual CPU consumption and cross reference those programs to the job steps that use them.

Using the Panel

Use line commands to work with a specific application program.

Type this: **To do this:**

XJ Cross reference the job steps using a specific application program. The job steps will be displayed on a subsequent panel in which other familiar AQM-APC options are available. See "Cross Referencing the Job Step" on page 50.

SS Display the top 5 most significant statements belonging to an application program. See "Displaying the Significant Statements" on page 53.

Columns

Appl PGM

The name of the application program found on the stored measurement.

Annual CPU

A summation of the estimated annual CPU consumption in minutes of the application program used by job steps within the Data Mining Scope. For more information regarding this calculation, see page 37.

Annual Frequency

A summation of the annual number of executions of the job steps within the Data Mining Scope that are calling the application program. For more information regarding this calculation, see page 37.

No. of Job Steps

The number of job steps within the Data Mining Scope calling the application program.

Data Mining System Programs

To list all system programs found within the Data Mining Scope, enter option **2** on the Data Mining Menu.

```

APCBP501 --- AQM-APC - Data Mining System Programs ----- Row 1 to 14 of 498
COMMAND ===>                                     SCROLL ===> CSR

Commands      : SORT N/C/F/J   - Name / Cpu / Frequency / No. Job steps
Line Commands: XJ -Xref Job step      XS -Xref SubSystem

LC System PGM      Annual      Annual      No. of
                   CPU         Frequency   Job Steps   SubSystem
-----
DSNKFTCH           13,979          25,394         201       .DB2
DSNKNXT2           13,596          11,192          41       .DB2
DFSDLR00           9,625           18,471         239       .IMS
IDA019L1           9,249           17,139         220       .VSAM
DSNIONX2           8,684           26,942         213       .DB2
DSNB1GET           8,591           30,405         240       .DB2
DSNIOST2           6,900           30,745         243       .DB2
IEAVRT05           6,613           20,962         212       .NUCLEUS
IEAVSTA1           5,139           32,825         255       .NUCLEUS
DSNIRNXT           4,472           11,447          63       .DB2
DSNXERD            4,044           32,794         266       .DB2
DSNISFX2           3,719            4,887          62       .DB2
DSNKTRAV           3,704           24,639         197       .DB2
DSNB1REL           3,577           29,159         225       .DB2
DSNIWNRFP          3,426            7,901          70       .DB2

```

Panel APCBP501: Data Mining System Programs

All system programs belonging to the most current measurements of job steps within the Data Mining Scope are listed. Use the panel to spot programs with high annual CPU consumption and cross reference those programs to the job steps that call them or the subsystem under which they run.

Using the Panel

Use line commands to work with a specific application program.

Type this: **To do this:**

XJ Cross reference the job steps using a specific system program. The job steps will be displayed on a subsequent panel on which other familiar AQM-APC options are available. See "Cross Referencing the Job Step" on page 50.

XS Cross reference the subsystem under which a specific system program is executed. The subsystem information will be displayed on a subsequent panel. See "Cross Referencing the Subsystem" on page 52.

Columns

System PGM

The name of the system program found on the stored measurement.

Annual CPU

A summation of the estimated annual CPU consumption in minutes of the system program used by job steps within the Data Mining Scope. For more information regarding this calculation, see page 37.

Annual Frequency

A summation of the annual number of executions of the job steps within the Data Mining scope that are calling the system program. For more information regarding this calculation, see page 37.

No. of Job Steps

The number of job steps with the Data Mining Scope that call the system program.

SubSystem

The subsystem name to which the system program belongs. If the column contains the value of 'MORE', use line command **XS** to display all subsystems have used the selected system program.

Data Mining Subsystems

To list all subsystems found within the Data Mining Scope, enter option **3** on the Data Mining Menu.

```

APCBP501 --- AQM-APC - Data Mining Subsystem ----- Row 1 to 16 of 16
COMMAND ===>                                     SCROLL ===> CSR

Commands      : SORT N/C/F/J   - Name / Cpu / Frequency / No. Job steps
Line Commands: XJ -Xref Job step

LC Subsystem   Annual CPU   Annual Frequency   No. Job Steps
-----
. DB2          8,805         2,628             16
. XES          432           2,018             13
. NUCLEUS      318           2,628             16
. COMMON       282           2,369             12
. IMS          119           1,722             10
. SVC          54            2,281             16
. VSAM         41            959               7
. XMEMORY      34            2,377             13
. PL/ILIB      15            183               1
. IRLM         6             939               4
. COBLIB       0             2,051             14
. IOCS         0             2,094             15
. MEDIAMG     0             1,481             9
. PRIVATE      0             599               5

```

Panel APCBP501: Data Mining Subsystems

All subsystems belonging to the most current measurements of job steps within the Data Mining Scope are listed. Use the panel to spot subsystems with high annual CPU consumption and cross reference those subsystems to the job steps that run under them.

Using the Panel

Use line command **XJ** to cross reference the job steps that run under a subsystem. The job steps will be displayed, see "Cross Referencing the Job Step" on page 50.

Columns

Subsystem

The name of the subsystem found on the stored measurement.

Annual CPU

A summation of the estimated annual CPU consumption in minutes of the subsystem used by job steps within the Data Mining Scope. For more information regarding this calculation, see page 37.

Annual Frequency

A summation of the annual of executions of the job steps within the Data Mining Scope that are using the subsystem. For more information regarding this calculation, see page 37.

No. of Job Steps

The number of job steps within the Data Mining Scope that have used the subsystem.

Data Mining DB2 Plans

To list all DB2 plans used by job steps within the Data Mining Scope, enter option **4** on the Data Mining Menu.

```

APCBP501 -- AQM-APC - Data Mining DB2 Plans ----- Row 1 to 16 of 37
COMMAND ===>                                     SCROLL ==> CSR

Commands      : SORT N/C/F/J  - Name / Cpu / Frequency / No. Job steps
Line Commands: XJ -Xref Job step

LC DB2 Plan      Annual      Annual      No. of
                   CPU        Frequency   Job Steps
-----
B92350            69          674         26
B92291            62          747         21
B92020            55          8,169       243
B92011            22          806         26
B92356            21          224         8
B92221            15          280         10
B92277            6           403         13
B92344            5           429         15
B92250            4           193         7
B92320            4           162         6
B92322            3           162         6
B92700            3           186         6
B92944            3           87          3
F65710            3           62          2
B92940            2           682         22
B92231            1           174         6

```

Panel APCBP501: Data Mining DB2 Plans

All DB2 plans belonging to the most current measurements of job steps within the Data Mining Scope are listed. Use the panel to spot plans with high annual CPU consumption and cross reference those plans to the job steps that use them.

Using the Panel

To cross reference the job steps using a specific DB2 plan, select the DB2 plan using line command **XJ**. The job steps will be displayed on a subsequent panel on which other familiar AQM-APC options are available. See "Cross Referencing the Job Step" on page 50.

Columns

DB2 Plan

The name of the DB2 plan found on the stored measurement.

Annual CPU

A summation of the estimated annual CPU consumption in minutes of the DB2 plan used by job steps within the Data Mining Scope. For more information regarding this calculation, see page 37.

Annual Frequency

A summation of the number of executions of the job steps within the Data Mining Scope that are using the DB2 plan. For more information regarding this calculation, see page 37.

No. of Job Steps

The number of job steps within the Data Mining Scope that use the DB2 plan.

Data Mining Job Steps

To list all job steps found in the Data Mining Scope, enter option 5 on the Data Mining Menu.

```

APCBP502 --- AQM-APC - Data Mining Jobsteps ----- Row 1 to 14 of 670
COMMAND ===>                                     SCROLL ===> CSR

Commands      : SORT J/I/C/F/MC/MD - Jobname/ Imp/ Cpu/ Freq/ MeasCpu/ MeasDate
Line Commands: JO -Job Overview   MO -Meas. Overview   AO -Alert Overview

```

LC	Jobname	Stepname	Procstep	Statistical	Annual		Measurement	
				Importance	CPU	Freq.	CPU	Date
	ZPEB1701	EBPROC1	EBSTP04	19	12,051	117	103	2002-11-29
	ZOOC2RG1	OCSTP05	TSO01	20	9,200	184	50	2002-11-05
	ZOFW3036	FWPROC1	FWSTP01	22	8,976	187	48	2002-11-09
	ZOLS1402	LSPROC1	LSSTP02	24	8,456	151	56	2002-11-04
	ZOZI1FA1	ZIPROC1	ZISTP01	20	8,256	192	43	2002-12-15
	ZOSX5002	SXPROC1	SXSTP02	19	8,228	484	17	2002-08-09
	ZOKS1210	KSPROC1	KSSTP01	21	5,408	169	32	2002-10-13
	ZOVT1P22	VTPROC1	VTSTP01	23	4,860	162	30	2002-10-08
	ZODA179W	DAPROC00	STEP020	22	4,530	151	30	2002-02-10
	ZOMV1630	MVPROC1	MVSTP02	12	4,512	188	24	2002-09-10
	ZOVT1N11	VTPROC1	VTSTP01	24	4,509	167	27	2002-08-20
	ZOFY1011	FYPROC1	FYSTP02	22	4,344	181	24	2002-07-29
	ZOOC4EU3	OCSTP03	TSO01	18	4,312	154	28	2002-10-04
	ZOFW9047	FWPROC1	FWSTP01	23	3,933	207	19	2002-08-12

Panel APCBP502: Data Mining Jobsteps

The Data Mining Jobsteps panel is a listing of all job steps found in the Data Mining Scope.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific job step displayed in the list.

Type this: **To do this:**

- JO** Display an overview of information about the job step.
- MO** Display an overview of all stored measurements for the job step. As a reminder, the Data Mining process was based on the most current measurement.
- AO** Display an overview of alerts for the job step.

Columns

Jobname/Stepname/Procstep

The job name, step name, and procedure step name of the job step.

Statistical Importance

The job step importance is an AQM-APC ranking used to identify the most resource consuming job steps. All job steps are ranked from 0 - 50 where 0 is the least important.

Annual CPU

The estimated annual CPU time in minutes that is consumed by the job step. For more information regarding this calculation, see page 37.

Annual Frequency

The estimated annual number of job step executions. For more information regarding this calculation, see page 37.

Measurement CPU

The CPU consumption found on the most current InTune Measurement of the job step.

Measurement Date

The date of the most current InTune Measurement of the job step.

Cross Referencing the Job Steps

To cross reference the job steps using an application program, a system program, a DB2 plan, or those running under a specific subsystem, use line command **XJ** on the panel display of the specific results table.

```

APCBP503 --- AQM-APC - Data Mining XREF Jobstep ----- Row 1 to 2 of 2
COMMAND ===>                                     SCROLL ===> CSR

Commands      : SORT J/C/F          - Jobname / Cpu / Frequency
Line Commands: JO -Job Overview    MO -Meas. Overview      AO -Alert Overview

Cross Reference for P9LS3471 / Application Program
                Annual          Annual
LC Jobname     Stepname Procstep   CPU           Frequency
-----
ZOLS1302 LSPROC1  LSSTP02         6,300          149
ZOLS0112 LSPROC1  LSSTP02          20             12
***** Bottom of data *****

```

Panel APCBP503: Data Mining XREF Jobstep

The Data Mining XREF Jobstep panel is a cross reference listing of all job steps -- those within the Data Mining Scope -- that call the selected application program, system program, or DB2 plan or those running under a specific subsystem. The selected cross reference source is displayed on the panel in a field called Cross Reference for.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific job step displayed in the list.

Type this: **To do this:**

- JO** Display the Job Overview panel.
- MO** Display the Measurement Overview panel to see all stored measurements for the job step. As a reminder, the Data Mining process was based on the most current measurement.
- AO** Display an overview of any alerts that might exist.

Columns

Jobname/Stepname/Procstep

The job name, step name, and procedure step name of the job step.

Annual CPU

The estimated annual CPU time in minutes that is consumed by the job step. For more information regarding this calculation, see page 37.

Annual Frequency

The estimated annual number of job step executions. For more information regarding this calculation, see page 37.

Cross Referencing the Subsystem

To cross reference the subsystem under which a system program executes, use line command **XS** on the Data Mining System Programs panel.

```

APCBP504 --- AQM-APC - Data Mining XREF Subsystem ----- Row 1 to 1 of 1
COMMAND ===>                                         SCROLL ===> CSR

Commands      : SORT S/C/F      - Subsystem / Cpu / Frequency
Line Commands: XJ -XREF by Job

Cross Reference for DSNKNXT2 / System Programs

LC SubSystem      Annual CPU      Annual Frequency
-----
. DB2              13,596              11,192
***** Bottom of data *****

```

Panel APCBP504: Data Mining XREF Subsystem

The Data Mining XREF Subsystem panel allows you to see a summation of the CPU consumption and Annual Frequency of the job steps using the specified system program *and* running under this subsystem.

Using the Panel

To cross reference the job steps using the selected system program and subsystem, use line command **XJ**. The job steps will be displayed on a subsequent panel on which other familiar AQM-APC options are available. See "Cross Referencing the Job Step" on page 50.

Columns

Subsystem

The name of the subsystem found on the stored measurement.

Annual CPU

The estimated annual CPU time in minutes that is consumed by the subsystem used by job steps within the Data Mining Scope. For more information regarding this calculation, see page 37.

Annual Frequency

The estimated annual number of executions of job steps within the Data Mining Scope that are using the subsystem. For more information regarding this calculation, see page 37.

Displaying the Significant Statements

To see the most significant statements belonging to an application program, select the program with line command **SS** on the Data Mining Application Programs panel.

```

APCBP501 --- AQM-APC - Data Mining Application Programs --- Row 1 to 16 of 561
COMMAND ===>                                SCROLL ===> CSR

Commands      : SORT N/C/F/J   - Name / Cpu / Frequency / No. Job steps
Line Commands: XJ -Xref Job step   SS -Significant Statements
              Annual              Annual          No. of
LC Appl PGM   CPU                Frequency    Job Steps
-----
SS Q5FWV061   7,077
Q9LS3471     6,047
LTBXTREE     2,161
Q9OKP041     2,136
RVWDCMP      1,261
Q5FWV071     901
AG000C1      819
Q9OKP061     761
SVRXSADL     752
Q4LP1011     722
Q7LZ81Z1     709
Q7VTT#01     622
Q7LM2421     530
Q7VTD#31     470
Q7OKP021     452
Q7GL0202     443
  
```

APCBPMSS Significant Statements	
Location	Annual CPU
0000B8C0	137
0000B880	130
0000B500	127
0000B340	124
0000B7C0	124

Panel APCBPMSS: Significant Statements

The Significant Statements window displays the statements with the highest annualized CPU consumption for the selected application program. The top 5 statements are listed.

Columns

Location

Location addresses for statements with the highest annualized CPU consumption.

Annual CPU

The estimated annual CPU consumption for the statement. For more information regarding this calculation, see page 37.

Exporting Central Component Data

This section details how to export the job and alert information of the Central Component.

Export Job Information - Job APCBJEXP

To export information from the AQM-APC database, use job APCBJEXP. This job will create a list or a file that can be exported for use in other systems, e.g., EXCEL, SAS. The data is exported from the database to a sequential file that can be used in other mainframe systems or file transferred to the PC.

```
//JOB CARD
//*****
//* AQM-APC: APCBJEXP *
//* MAINTENANCE: APM TEAM *
//* ACTION: EXPORT JOB INFO FROM AQM-APC DATA BASE *
//* FUNCTION: LIST OR EXPORT FILE WILL BE CREATED *
//*-----*
//* COPYRIGHT A.P.M. AG ZURICH 1999 - 2002 *
//*****
//APCBATAB EXEC PGM=APCBATAB
//STEPLIB DD DISP=SHR,DSN=prefix.AQMAPC.LOAD
//APCIN DD DISP=SHR,DSN=prefix.AQMAPC.CNTL(APCBCJEX)
//APCTAB DD SYSOUT=*
//APCEREP DD SYSOUT=*
//APCBJOB1 DD DISP=SHR,
// DSN=prefix.AQMAPC.KSDSJOB
//APCBALT1 DD DISP=SHR,
// DSN=prefix.AQMAPC.KSDSALT
//APCBBPM1 DD DISP=SHR,
// DSN=prefix.AQMAPC.KSDSBPM
```

JCL for Job APCBJEXP

To assist you in using this job information once it has reached its destination, the following record description is provided. Each field of the record is separated by a semicolon delimiter.

Table 4: Record Description for Job Export File

Field contents for Job Information Export	Length
Job name	8
Step name	8
Procedure step	8
Program name	8
Application program	8
Number of runs	5
Condition code exceptions	4
Number of measurements	4
Most recent alert state	2
Consumed elapsed time - minutes	4
Service units - in thousands	7
Importance	2

The following is an example of a job information export record:

```

      !           !           !           !           !   NUMBER OF   ALT!   CONSUMPTION
JOBNAME !STEPNAME!PROCSTEP!PGMNAME !APPLPGM !RUNS ! CC !PROF!ST!ELPS!SRVUNIT!IM
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
JOB4500;ABPROC1 ;ABSTP02 ;DFSRR00;P3AB398 ;00005;0000;0000;PE;0042;0011993;18;

```

Figure 4: Example Job Export Record

The scope of the data to be exported is defined within the job by using input parameters in member APCBCJEX of the product CNTL library. These parameters are described in the following table.

Table 5: Parameters for APCBCJEX Member

APCBCJEX Parameters	Meaning
MODE= <i>n</i>	An E for export or an L for list. The default is E.
JOBNAME= <i>name</i>	A fully qualified job name or a generic name using the underscore '_' as a wildcard.
PGMNAME= <i>name</i>	A fully qualified program name or a generic name using the underscore '_' as a wildcard.
IMPORTANCE>=	Enter a value for the AQM-APC importance. A number from 1 to 50 is valid. A higher number indicates a higher job step importance.
SERVICE-UNITS>=	Enter the service units in thousands, 1 - 999999.
ELAPSED-TIME>=	Enter the session duration in minutes, 1 - 9999.

The following is an example of how to use the APCBCJEX parameters:

```

MODE=L
JOBNAME=  _R  _____
PGMNAME=APC  _____
IMPORTANCE>=10
ELAPSED-TIME>=30
SERVICE-UNITS>=1000

```

Figure 5: Example of Job Information Export Parameters

Export Alerts - Job APCXJEXP

To export alerts from the AQM-APC database, use job APCXJEXP. This job will create a list or a file that can be exported for use in other systems, e.g., EXCEL, SAS. The alerts are exported from the alert database to a sequential file that can be used in other mainframe systems or file transferred to the PC.

```
//JOB CARD...
//*****
//* AQM-APC: APCXJEXP *
//* MAINTENANCE: APM TEAM *
//* ACTION: EXPORT ALERT INFO FROM AQM-APC DATA BASE *
//* FOR JOBSTEPS, CICS OR IMS TRANSACTIONS *
//* FUNCTION: LIST OR EXPORT FILE WILL BE CREATED *
//*-----*
//* COPYRIGHT A.P.M. AG ZURICH 1999 - 2002 *
//*****
//APCXATAB EXEC PGM=APCXATAB
//STEPLIB DD DISP=SHR,
// DSN=prefix.AQMAPC.LOAD
//APCIN DD DISP=SHR,
// DSN=prefix.AQMAPC.CNTL (APCXCAEX)
//APCBALT1 DD DISP=SHR,
// DSN=prefix.AQMAPC.KSDSALT
//APCTAB DD SYSOUT=*
//APCEREP DD SYSOUT=*
```

JCL for Job APCXJEXP

To assist you in using this alert information once it has reached its destination, the following record description is provided. The field delimiter is a semicolon.

Table 6: Record Description for Alert Export File

Field contents for Transaction Alert	Length	Field contents for Job Alert	Length
Transaction name	8	Job name	8
AQM-APC system control name	8	Step name	8
Alert ID	5	Procedure step	8
Creation date (yyyy-mm-dd)	10	Program name	8
Job name of the region	8	Link date of program (yyyy-mm-dd)	10
State code	4	State code	4
Reason code	4	Reason code	4
Average CPU time percentage	6		
Measured CPU percentage	6		
Average number of measurements	5		

The following is an example of a transaction alert export record:

```
TX-NAME !SYS-NAME!ALT-#!CR-DATE !JOBNAME !STAT!FROM!AV CPU!ME CPU!MEAS#!
-----+-----+-----+-----+-----+-----+-----+-----+
OKD07900;IMS ;17682;2002-11-03;IMSZZ001;OPEN;STAT; .39; 1.69; 165;
```

Figure 6: Example Alert Export Record

The scope of the data to be exported is defined within the job by using input parameters in member APCXCAEX of the product CNTL library. These parameters are described in the following table.

Table 7: Parameters for APCXCAEX Member

APCXCAEX Parameters	Meaning	Default
MODE= <i>n</i>	E = Export or L = List. The default is E.	E
SUBSYSTEM= <i>s</i>	B = Batch, C = CICS, or I = IMS	B
JOBNAME= <i>name</i>	A fully qualified job name for batch or a generic name using the underscore '_' as a wildcard.	all
TX-NAME= <i>name</i>	A fully qualified online transaction or a generic name using the underscore '_' as a wildcard.	all
PGMNAME= <i>name</i>	A fully qualified program name for batch or a generic name using the underscore '_' as a wildcard.	
SYSNAME= <i>name</i>	A fully qualified system name for online or a generic name using the underscore '_' as a wildcard.	all
CREATION-DATE= <i>yyyy-mm-dd</i>	The start date of alerts.	all
STATE= <i>state</i>	Alert state: PEND, OPEN, REV, CLOSE	all

All defined parameters will be combined with a logical "AND".

The following is an example of how to use the APCXCAEX parameters:

```
MODE=L
SUBSYSTEM=I
TX-NAME=_____
PGMNAME=_____
SYSNAME=_____
STATE=OPEN
*CREATION-DATE=2002-06-01
```

Figure 7: Example of Alert Export Parameters

Export Data Mining - Job APCBJDAX

To export data mining information from the AQM-APC database, use job APCBJDAX. This job will create a list or a file that can be exported for use in other systems, e.g., EXCEL, SAS. The data is exported to a sequential file that can be used in other mainframe systems or file transferred to the PC.

```
//JOB CARD...
//*****
//* AQM-APC: APCBJDAX *
//* MAINTENANCE: APM TEAM *
//* FUNCTION: XREF OF DATA MINING *
//* ACTION: BUILD XREF ON LIST *
//* COPYRIGHT A.P.M. AG ZURICH 1999 - 2002 *
//*****
//APCBADAX EXEC PGM=APCBADAX
//STEPLIB DD DSN=prefix.AQMAPC.LOAD,DISP=SHR
//APCPARM1 DD DSN=prefix.AQMAPC.PARMS,DISP=SHR
//APCBPRO1 DD DSN=prefix.AQMAPC.KSDSPRO,DISP=SHR
//APCBBPM1 DD DSN=prefix.AQMAPC.KSDSBPM,DISP=SHR
//APCBJOB1 DD DSN=prefix.AQMAPC.KSDSJOB,DISP=SHR
//APCIN DD DSN=prefix.AQMAPC.CNTL(APCBCDAX),DISP=SHR
//APCREP DD SYSOUT=*
//APCEREP DD SYSOUT=*
```

JCL for Job APCBJDAX

The scope of the data to be exported is defined within the job by using input parameters in member APCBCDAX of the product CNTL library. These parameters are described in the following table.

Table 8: Parameters for APCBCDAX Member

APCBCDAX Parameters	Meaning	Default
XREF= <i>n</i>	where <i>n</i> identifies the tuning object: 1 Application program 2 System program 3 subsystem 4 DB2 plan 5 System program 6 Corresponding job steps A All cross references	A
SCOPE= <i>x</i>	where <i>x</i> identifies the Data Mining Scope: T All objects in the TOP Scope ALL All objects of AQM-APC M <i>nnn</i> Maximum <i>nnn</i> objects	T
JOBNAME= <i>name</i>	A fully qualified job name or a generic name using the underscore '_' as a wildcard.	all

PGMNAME= <i>name</i>	A fully qualified program name or a generic name using the underscore '_' as a wildcard.	all
IMPORTANCE= <i>nn</i>	where <i>nn</i> is the lower limit of the job's importance.	all
FROMDATE= <i>yyyymmdd</i>	Lower limit of the measurement's creation date.	all

 **Note:** All defined parameters will be combined with a logical "AND".

The following is an example of how to use the APCBCDAX parameters:

```

XREF=A
SCOPE=T
JOBNAME=_____
PGMNAME=_____
IMPORTANCE=00
FROMDATE=20020101

```

Figure 8: Example of Data Mining Export Parameters

Measuring the Jobs of Critical Paths - Job APCBJCRI

When fire fighting, use job APCBJCRI to initiate InTune measurements for the jobs in a critical path. Within an input file to this job, you can define threshold values for service units, elapsed time, and importance, as well as all job names belonging to the critical path. Program APCBACRI will identify all steps contained in each critical path job. If these job steps are within the AQM-APC Scope, APCBACRI will check if their statistical average values for resource consumption, maintained by AQM-APC, exceed the threshold values. If they do, an alert is generated with reason code USER.

```
//JOB CARD...
/*****
/* AQM-APC: APCBJCRI *
/* MAINTENANCE: APM TEAM *
/* ACTION: CREATION OF ALERTS VIA CRITICAL PATH AND LIMITS. *
/* FUNCTION: ===== *
/*-----*
/* COPYRIGHT A.P.M. AG ZURICH 1999 - 2002 *
/*****
//STEP CRI EXEC PGM=APCBACRI
//STEPLIB DD DSN=prefix.AQMAPC.LOAD,DISP=SHR
//APCCRIT DD DSN=prefix.AQMAPC.CNTL(APCBCCRI),DISP=SHR
//APCBJOB1 DD DSN=prefix.AQMAPC.KSDSJOB,DISP=SHR
//APCBALT1 DD DSN=prefix.AQMAPC.KSDSALT,DISP=SHR
//APCREP DD SYSOUT=*
//APCEREP DD SYSOUT=*
```

JCL for Job APCBJCRI

The job names and thresholds must be defined by using input parameters in member APCBCCRI of the product CNTL library. These parameters are described in the following table.

Table 9: Parameters for APCBCCRI Member

APCBCCRI Parameters	Meaning	Default
%JOBPOS= <i>nn</i>	The start column of the job name in the critical job file.	01
%LIMITS SRVU= <i>nnnnnn</i> / ELPSD= <i>nnnn</i> /IMP= <i>nn</i>	Thresholds for service units, elapsed time, and importance, when separated by a /, are combined with a logical OR.	
%LIMITS SRVU= <i>nnnnnn</i> & ELPSD= <i>nnnn</i> &IMP= <i>nn</i>	Thresholds for service units, elapsed time, and importance, when separated by a &, are combined with a logical AND.	
<i>where:</i>	SRVU is a 6 digit number representing the lower limit of service units in thousands, e.g., 009999 ELPSD is a 4 digit number representing the lower limit of elapsed time in minutes, e.g., 0099. IMP is a 2 digit number representing the lower limit of importance, e.g., 09.	zero

The following rules apply to defining parameters in this member:

- An asterisk "*" in column 1 always indicates the beginning of a comment. All text following an asterisk in column 1 is ignored.
- A percent sign "%" in column 1 indicates the beginning of a parameter line. All input must be one of the valid parameters described above, JOBPOS or LIMITS.
- The program will expect to find one job name in any line that does not have an * nor a % in column 1. The default starting column of a job name is column 1 unless otherwise specified by the %JOBPOS parameter.
- All digits of the limits must be supplied, i.e., use leading zeros as place holders if necessary, e.g., SRVU=009999.
- The delimiters / and & can NOT be mixed. For example, SRVU=009999&ELPSD=9999/IMP=50 is NOT valid.
- An undefined limit defaults to zero.
- If the result is true, the job step will be alerted.
- If no limits are defined, all jobs will be alerted.
- All jobs will be reported under APCREP DD SYSOUT=*

The following is an example of how to define the parameters in member APCBCCRI:

```
*  DEFINITIONS OF LIMITS
*
%LIMITS SRVU=000999/ELPSD=0028/IMP=09
*LIMITS ELPSD=0030&SRVU=010000
*
**  START OF JOBS BELONGING TO THE CRITICAL PATH
*
JOB01234
JOB01235
JOB01236
JOB01237
```

Figure 9: Example of APCBCCRI Member

Chapter 3. Using the Checkpoint Checker

☞ This is an optional feature of AQM-APC. If you would like to use this feature, contact your product representative for more information.

Functional Overview of the Checkpoint Checker

Many batch jobs use DLI and/or DB2 as a database. If a batch job abends, usually backout processing is automatically started by the database system. The backout process works until a synchpoint is found. The DLI checkpoint command provides such a synchpoint. If checkpoint writing is not implemented in the application program, or if it is done in an improper way, it takes a long time to perform the backout process. This process can sometimes take several hours, exceeding the time limit for the job or job step. This can cause an abend or require an operator to cancel the job.

There are two major considerations to implement checkpoint writing in a program:

1. The program needs an IMS environment, even if it is only using DB2 SQL.
2. To provide a program with checkpoint writing requires a detailed understanding of and intervention into the logic of the application program.

The benefits of checkpoint writing are:

1. High resource consumption and elapsed time for the backout processing is avoided.
2. Jobs that implement checkpoint writing can be canceled by the operator on demand without long delays and can be restarted.

The Checkpoint Checker helps answer the following essential questions for MVS systems personnel:

1. Which job steps are using DLI or DB2 databases?
2. How high is the checkpoint writing frequency? If, for example, there are 30 minutes between each checkpoint written, checkpoint writing does not have a significant impact.
3. Which job steps run without checkpoint writing?
4. How important is the consumption habit of each single job step, as compared with all other job steps?

Technical Overview of the Checkpoint Checker

The Checkpoint Checker consists of:

1. AQM-APC Server, gathering and storing all relevant data in real-time.
2. TSO online query facility.
3. Batch job reporter.

With AQM-APC 4.3.0, all Checkpoint Checker components are integrated into existing versions of the Central Component and the AQM-APC Server.

AQM-APC Server

The AQM-APC Server performs real-time supervision of all job steps within the AQM-APC Scope. The components of the AQM-APC Server recognize:

1. The use of DB2 by reading and interpreting the SMF 89 record after job step termination.
2. The use of DLI by checking if the IMS region controller is executed in the JCL (DFSRRRC00 or derivatives).
3. Each physical checkpoint written, by reading and interpreting message DFS681I in the SYSLOG file.

The AQM-APC Server calculates the average time interval in seconds between checkpoint writing for a job step and stores this as a checkpoint frequency in the AQM-APC database.

TSO Online

Thus, all data displayed in the online query facility is also real-time. The following online functions are available

1. Define the scope of work, i.e., include or exclude job names or program names to define the proper scope.
2. Use the online Checkpoint Checker query facility with various selection criteria, e.g., which job steps with an average elapsed time of over 30 minutes that access DB2 tables do not write checkpoints.
3. Use all statistical information about job steps gathered by the Central Component.
4. Use the Alert Management panels of the Central Component to keep track of checkpoint problems and to change initiatives.

The Checkpoint Checker online system is fully integrated into the ISPF dialog panels of the Central Component so all links into Central Component options (Profiles, Alerts and Job info) are available.

Reports

For background processing of information about checkpoint writing, a batch job is available to create:

1. Printable listings.
2. Sequential export files, e.g., for use in EXCEL or ACCESS import functions.

This program allows you to obtain output based on defined selection criteria. This output can be used in various ways to control checkpoint writing within a job step.

For details on how to export checkpoint information, see "Job APCKJCPT - Export Checkpoint Information" on page 70.

Benefits

The major benefits of using the Checkpoint Checker are:

1. In the long run, all important job steps must implement checkpoint writing and the Checkpoint Checker gives the user detailed information and easy to handle control regarding this process.
2. If a runaway job step should be canceled by the operator, the Checkpoint Checker provides immediate online support in determining whether proper checkpoint writing exists or not.

The following is provided by the Checkpoint Checker feature:

- No changes in JCL, programs, or OPC schedules.
- A fully automatic solution without any manual work.
- Insignificant CPU consumption for the permanent Checkpoint Checker process.
- No additional DASD space is necessary if AQM-APC is already installed.

Using the Checkpoint Checker

To access the Checkpoint Checker, select option 5 on the Central Component Menu. The following Checkpoint Query Facility panel will be displayed. The Checkpoint Query Facility allows you to query checkpoint information based on selection criteria that you define.

```

APCKP001 --- AQM-APC - Checkpoint Query Facility -----
COMMAND ===>

Jobname  Stepname Procstep  From Date  DB2  Checkpoint  Average values Im
Occurred  Freq.    No.  Elpsd    Srvu  po
-----
ABAG____  _____  _____  2002 01 01  _  00,000 000,000 0,000 00,000 00
                                     YYYY MM DD  Y   Sec.      Min.    Th.

Any combination of selection criteria can be defined.

```

Panel APCKP001: Checkpoint Query Facility

Using the Panel

1. Define the selection criteria columns as described below:
 - Jobname, Stepname, and Procstep can be defined using an underscore (_) as a wildcard. For example, ABAG____ will search for all job names that begin with ABAG.
 - From Date Occurred - Enter the most recent occurrence date.
 - DB2 - Enter a Y to indicate that DB2 processing is involved.
 - Checkpoint Freq. - Enter the "greater than" number of average seconds between checkpoint writing.
 - Checkpoint No. - Enter the "greater than" number of checkpoint writes during step execution.
 - Average Values Elapsed - Enter the "greater than" average elapsed time in minutes.
 - Average Values Service Units - Enter the "greater than" average service units consumed in thousands.
 - Impo - Enter a number between 00 and 50 to indicate the importance of the job step. The higher the number, the more important the job step. This importance is from the perspective of computer center resource consumption.

2. After entering the query selection criteria, press <ENTER>. The query facility will search for rows that match your criteria. The information that is found will be displayed on the Checkpoint Checker List panel.

The Checkpoint Checker query facility works as follows:

- All input fields can be defined as you would in other query languages using the LIKE command.
- The underscore is a wildcard used to represent one character.
- All selection criteria are used in combination with logical ANDs.
- Values entered for elapsed time in minutes and service units in thousands are used in a "greater compare". All jobs with consumption greater than the value entered will be selected.
- Values entered for frequency in seconds and number of checkpoint writes are used in a "greater compare". All jobs with consumption greater than the value entered will be selected.
- If the results table exceeds 4000 rows, you must define more specific selection criteria.

Displaying Checkpoint Query Results

After entering your selection criteria on the Checkpoint Query Facility panel, the results are presented on the Checkpoint Checker List panel.

```

APCKP002 --- AQM-APC - Checkpoint Checker List ----- Row 441 from 855
COMMAND ===>                                     SCROLL ===> CSR

Jobname      : *                               State : *
Commands     : SORT J/O/D/F/N/E/S/I/A - Job/Occu/Db2/Freq/No/Elp/Srvu/Imp/Alert
Line Commands: JO -Job Overview  PO -Profile Ov.  AT -Alert Text  AO -Alert Ov.
              A  - Give Alert

LC Jobname  Stepname Procstep  Recently  DB2  Checkpoint  Average  Im Alert
              occurred   Freq.    No. Elpsd  Srvu po state
-----
ABAG133U ABPROC1  AMSTP07  2002.10.29  _    0      0      1      11 06
ABAG133U ABPROC1  AMSTP02  2002.10.29  _    0      0      2      11 07
ABAG133U ABPROC1  AMSKV01  2002.10.29  _    0      0      1       2 04
ABAG133U ABPROC1  AMSKV02  2002.10.29  _    0      0      0       2 04
ABAG1340 ABPROC1  AMSTP01  2002.10.29  _    0      0      0      34 09
ABAG1341 ABPROC1  AMSTP01  2002.10.29  _    0      0      0     239 10
ABAG1342 ABPROC1  AMSTP01  2002.10.29  _   10     50      2  2,212 15 PEND
ABAG1343 ABPROC1  AMSTP01  2002.10.29  _    0      0      0  4,069 14
ABAG1344 ABPROC1  AMSTP01  2002.10.29  _   108     2      2   284 12
ABAG1346 ABPROC1  AMSTP01  2002.10.29  _    14     76      4  6,381 17
ABAG1347 ABPROC1  AMSTP01  2002.10.29  _   121     1      2    77 10

```

Panel APCKP002: Checkpoint Checker List

The Checkpoint Checker List panel displays the results of your job selection query. In addition to allowing you to display other Central Component panels, the Checkpoint Checker List panel has a "Give Alert" option. The "Give Alert" option opens a window that allows you to create a User TEXT Alert.

Using the Panel

- Use the State input field to filter the jobs to be displayed by state, e.g., display only job steps with State = OPEN.
- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific job step displayed in the list.

Type this: To do this:

JO	Display an overview of job information, see "Job Overview" on page 35.
MO	Display an overview of stored measurements, see "Measurement Overview" on page 12.
AT	Display the information about an alert, see "Total Alert Text" on page 27.
AO	Display an overview of all alerts, see "Alert Overview" on page 24.
A	Open an alert with reason code CHCK. An alert confirmation window will be displayed.

Columns

Jobname/Stepname/Procstep

Displays the results based on your selection criteria for these fields.

Recently Occurred

The most recent occurrence date taken from SMF or, if not available, the first date detected by the job library scan (APCBAJCL).

DB2

If DB2 processing was used during the job step execution, a Y will appear in this column.

Checkpoint Freq

The actual number of average seconds between checkpoint writing.

Checkpoint No.

The actual number of checkpoint writes during step execution.

Average Elpsd

The actual average elapsed time in minutes.

Average Srvu

The actual average service units consumed in thousands.

Impo

An identifier that represents the importance of a checkpoint. This number is a number from 0 – 50 where 0 is least important. The importance indicates how the consumption of a particular job step is ranked in regards to consumption of computer center performance.

Alert State

Indicates the alert state of the job step. All possible alert states are listed and described in Table 2 on page 18.

Job APCKJCPT - Export Checkpoint Information

To export Checkpoint information from the AQM-APC database, use job APCKJCPT. This job will create a list or a file that can be exported for use in other systems, e.g., EXCEL, SAS. The data is exported from the database to a sequential file that can be used in other mainframe systems or file transferred to the PC.

```
//JOB CARD...
//*****
/* AQM-APC: APCBJCPT *
/* MAINTENANCE: APM TEAM *
/* ACTION: CREATION OF A CHECK POINT LIST WITH USER SELECTION *
/* FUNCTION: LIST OF EXPORT FILE WILL BE CREATED *
/*-----*
/* COPYRIGHT A.P.M. AG ZURICH 1999 - 2002 *
//*****
/*
//STEPTAB EXEC PGM=APCBACPT
//*
//STEPLIB DD DSN=prefix.AQMAPC.LOAD,
// DISP=SHR
//APCIN DD DSN=prefix.AQMAPC.CNTL(APCKCCPT),
// DISP=SHR
//APCBJOB1 DD DSN=prefix.AQMAPC.KSDSJOB,
// DISP=SHR
//APCREP DD SYSOUT=*
//APCEREP DD SYSOUT=*
```

JCL for Job APCBJCPT

The scope of the data to be exported must be defined by using input parameters in member APCKCCPT of the product CNTL library. These parameters are described in the following table. All parameters are combined with a logical "AND".

Table 10: Parameters for APCKCCPT

Parameters	Meaning
MODE= <i>n</i>	An E for export or an L for list. The default is E.
JOBNAME= <i>name</i>	A fully qualified job name or a generic name using the underscore '_' as a wildcard.
PGMNAME= <i>name</i>	A fully qualified program name or a generic name using the underscore '_' as a wildcard.
ELAPSED-TIME>=	Enter the session duration in minutes, 1 - 9999, to export data with an elapsed time greater than or equal to this amount.
IMPORTANCE>=	Enter the calculated importance, 1 - 9999, to export data with an importance greater than or equal to this amount.

The following is an example of how to use the APCKCCPT parameters:

```
MODE=E  
JOBNAME= R _____  
PGMNAME=APC _____  
ELAPSED-TIME>=30  
IMPORTANCE>=10
```

Figure 10: Example of Checkpoint Checker Export Parameters

Chapter 4. Using the CICS Feature

This chapter describes how to use the ISPF panels of the CICS Feature and how to export AQM-APC information.

The following flowchart illustrates how the System Control of the CICS Feature works:

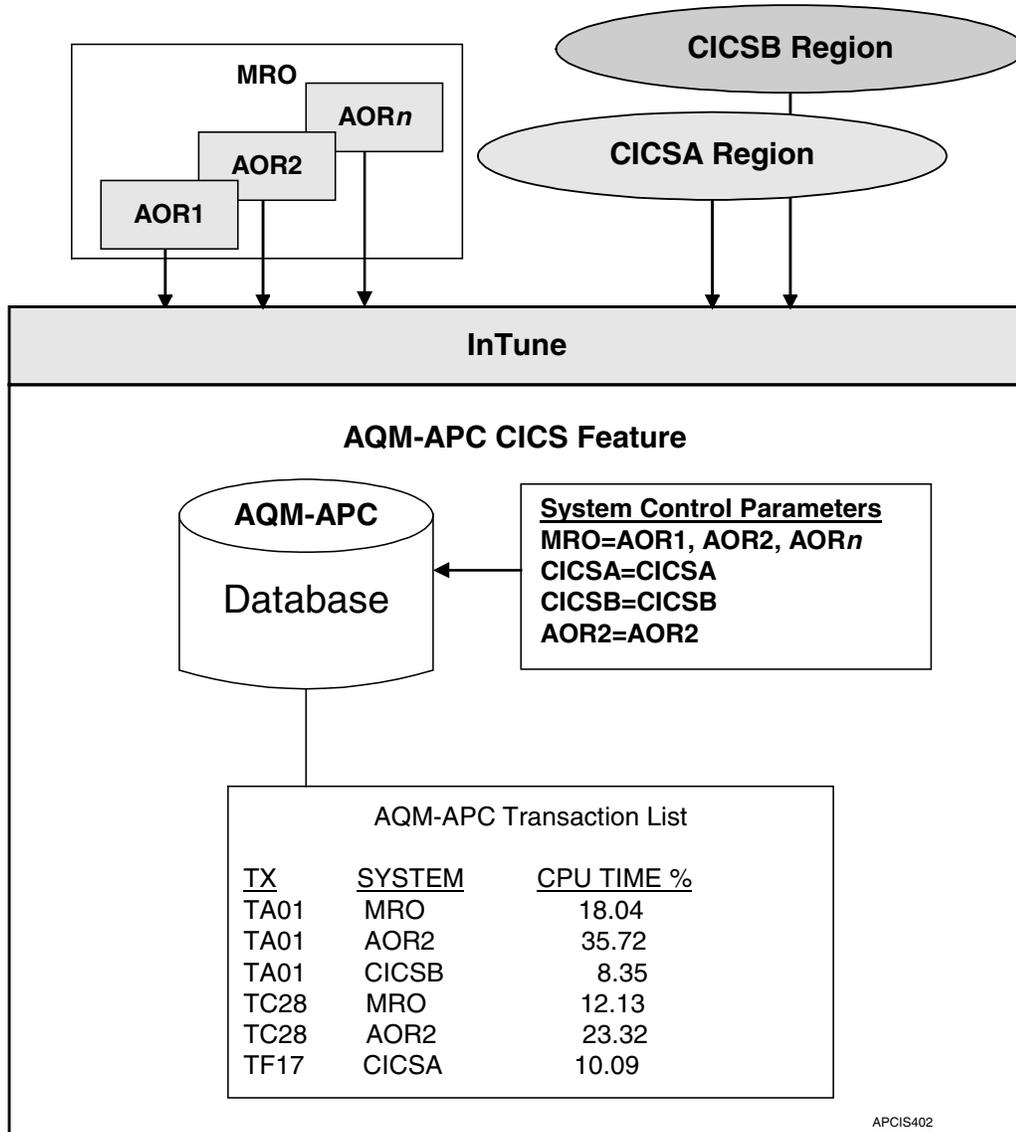


Figure 11: How System Control Works for the CICS Feature

The following flowchart illustrates the layout of the ISPF panels that allow you to perform the online functions of the CICS Feature:

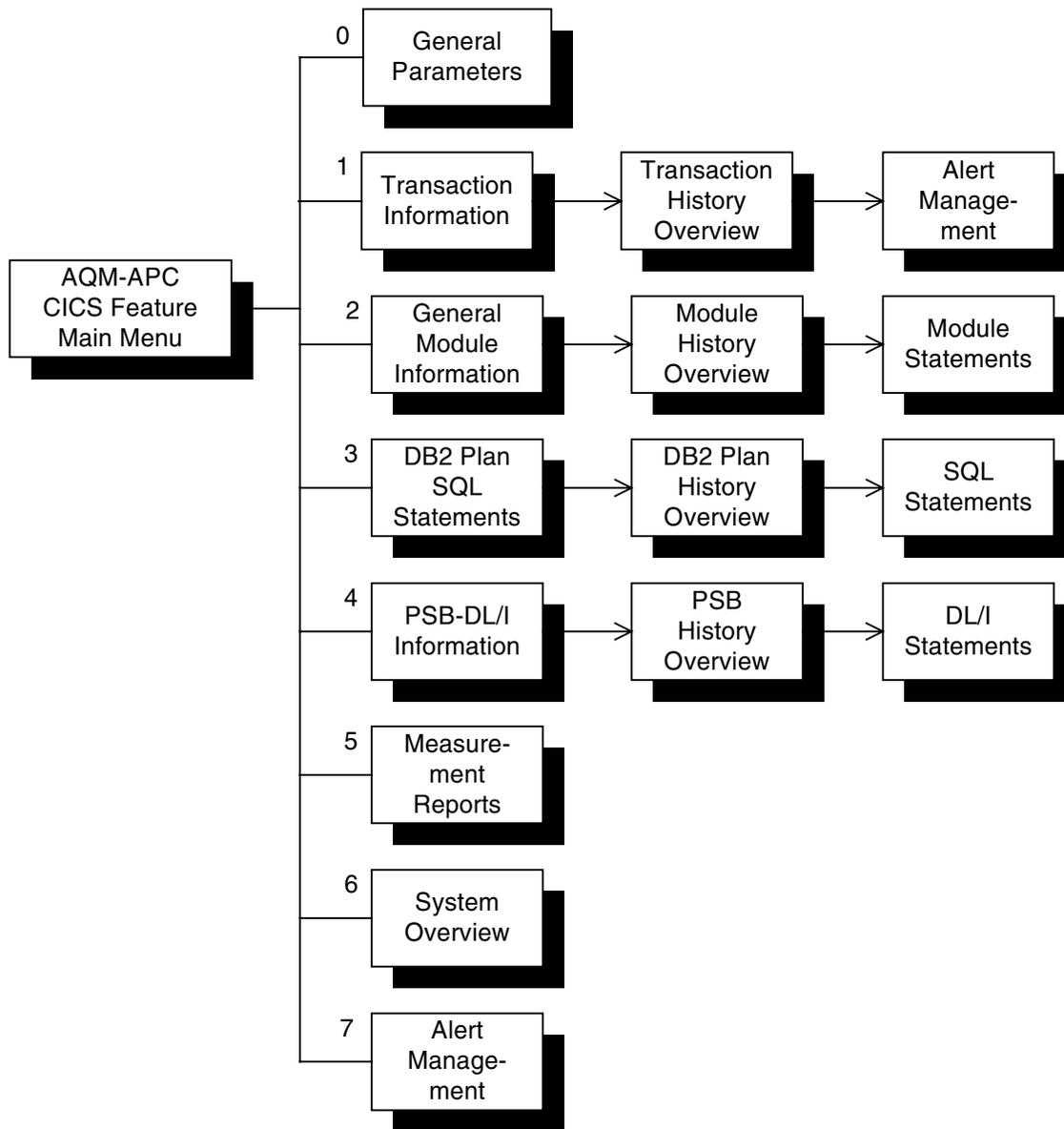


Figure 12: Panel Hierarchy of the CICS Feature

The CICS Feature Menu

The CICS Feature is accessed by starting REXX procedure APC and selecting the CICS Feature option.

```

APCGP000 --- AQM-APC --- CICS Feature Menu ----- Version 4.3.0
OPTION  ===>                                     SYSTEM:  *

          0 PARAMETERS      - Define User Specific Jobcard
          1 TRANSACTIONS    - Transaction Info
          2 MODULES         - General Module Info
          3 PLANS           - SQL Info
          4 PSBS            - DLI Info
          5 OVERVIEWS       - InTune Measurement Extractions #SJS
          6 SYSTEMS         - System Info
          7 ALERTS          - Alert Management
          T TUTORIAL        - obtain AQM-APC Help
          X or END          - End CICS Feature

```

input field

(c)2002 A.P.M. AG. All rights reserved.
CICS is a registered trademark of International Business Machines Corp.
InTune is a registered trademark of BMC Software Inc.

Panel APCGP000: CICS Feature Menu

The CICS Feature Menu allows you to access all components of the CICS Feature as described below.

To request information for a specific CICS system, enter the name in the SYSTEM field. Otherwise, to show all available information of all measured systems, use the default generic value "*" in the SYSTEM field.

After defining the CICS SYSTEM, to select options on the **CICS Feature Menu**, type one of the following numbers in the OPTION field and press <ENTER>:

-
- 0** Define a user specific jobcard for printing. For details regarding all other system parameters, refer to the *AQM-APC Administrator's Guide*.
 - 1** Display an overview of all available transaction information as of the last measurement day.
 - 2** Display an overview of all available module information as of the last measurement day.
 - 3** Display an overview of all available DB2 plan and SQL information as of the last measurement day.
 - 4** Display an overview of all available DLI information as of the last measurement day.

- 5 Display and work with different reports. Corresponding to this OVERVIEW option is an input field that allows you to ask for a specific report overview. The default is #SJS. The reports and their corresponding identifiers are:

Chapter ID	Overview Description
#SJS	Sampler and Job Statistics
#RDC	Resource Demand Chart
#COV	Code View
#DSA	Dataset Activity
#TXV	Transaction View
#POV	Pool View

To use the OVERVIEW option:

1. Place a number 5 in the OPTION field
 2. Key the general InTune report identifier in the corresponding overview input field
 3. Press <ENTER>.
- 6 Display the System Overview panel.
- 7 View all alerts issued.
-

Global Print JCL

The Global Print JCL panel is displayed when you choose **0** on the CICS Feature Menu.

```

APCXPP01 --- AQM-APC - Global Print JCL -----
COMMAND ==>

Enter your user specific JCL statements used in all AQM-APC
features for printing:

//QAX4506X JOB (5251,Z002,,FI-32),APM,CLASS=A,MSGCLASS=4,NOTIFY=QAX4506
//*
//PRINT      EXEC PGM=IEBGENER
//SYSIN      DD      DUMMY
//SYSPRINT   DD      SYSOUT=*
//SYSUT2     DD      SYSOUT=*
//SYSUT1     DD      *

                Cancel: CAN
                Save  : END OR PF3

```

Panel APCXPP01: Global Print JCL

In order to use the print command of AQM-APC, you must have complete and correct JCL statements for the print job.

Using the Panel

In the lines provided on this panel, define your print job statements. These statements may include:

- Job card
- Local printer
- Specific SYSOUT classes
- Print formats.

Once defined, this print job JCL is used by all AQM-APC features (Central Component, CICS Feature, and IMS feature). This JCL is stored in your individual TSO user profile pool. If you do not save the input to this panel by exiting with PF3 or END, the profile pool is not loaded.

Transaction Information

The Transaction Information panel is displayed when option 1 is chosen on the CICS Feature Menu.

```

APCDP001 -- AQM-APC CICS Feature - Transaction Information --- Row 1 from 2191
COMMAND ==>
                                SCROLL ==> CSR

Transaction : *                Date: 2002.12.13                System: *
Commands    : SORT T/SY/C%/CA/CX/TC/S/A - Tx/SYs/Cpu%/CpuA/CputX/Times/Serv/As
Line Commands: TO - TX overview  AL Alert list  AI Alert insert
              TM - TX specific module info  TD - DBRM info  TP - PSB info
  
```

LC	Trans- action	System	Total CPU time %	CPU time abs sec	CPU time abs./TX	Times called	Serv time	A. Number S. Mod	in DBRM	TX PSB
	FRTX	PYI1	92.66	6,226.75	10.9819	567	0.24 O	12	1	
	TOKA	PYA1	65.93	4,508.95	450.8952	10	0.00 R	22	1	
	RBCU	PRB1	95.59	974.06	0.1783	5,461	0.00 O	56	13	
	LZF3	PAP1	31.93	876.47	0.1917	4,570	0.23 O	12	3	
	EBJ2	PGP1	15.28	850.02	3.8289	222	0.00 O	32	6	
	CM87	PCC2	22.74	742.68	1.4200	523	4.14 O	8	4	
	EBC6	PGP1	12.94	719.85	89.9815	8	0.00	63	45	
	TMRK	PYA1	9.66	660.64	1.7664	374	0.00 O	4	1	
	EBBC	PGP1	10.24	569.65	0.0771	7,386	0.45 O	48	19	
	ZIPE	PCC2	11.62	379.50	2.7107	140	6.87 O	12	9	
	ZL25	PAP1	13.04	357.94	0.3137	1,141	0.41 O	7	1	
	MPKB	PYA1	4.74	324.16	46.3098	7	0.00 O	10	6	
	EBB5	PGP1	5.25	292.05	0.0729	4,001	0.45 O	34	14	

Panel APCDP001: Transaction Information

The Transaction Information panel provides an overview of transaction information for all (or specific) systems as of the last measurement day. For each transaction displayed, any existing alert can be accessed or a new alert generated.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific transaction displayed in the list.

Type this: **To do this:**

TO Display an overview of historical information about the transaction.

AL Display the Alert List panel.

AI Insert a user alert.

Fields

Transaction

Use the Transaction field to limit the amount of transactions that are displayed by entering a transaction name. Generic notation is allowed by using "*" as a wild card, e.g., "A*" will display the information of all transactions beginning with "A". By default, all transactions measured during the last measurement date are displayed.

Date

Use the Date field to choose a specific date for which you would like to display information. The default is the last measurement date.

System

The System field contains the name of the system representing the CICS region in which the transactions run. To display only the information of a certain system, change the name in the System field on the CICS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns**Transaction**

Name of the transaction.

System

Name of the system representing the CICS region in which the transactions run.

Total CPU time %

Percentage of CPU utilization of the transaction within the system.

Total CPU time abs. sec

Total CPU utilization of the transaction in absolute seconds.

Total Delay time %

Total delay time is the AQM-APC summation of all delay times -- excluding CPU consumption -- from the InTune measurement. Total Delay Time % is the percentage of total delay time belonging to the transaction.

Total Delay time abs. sec

Total delay time is the AQM-APC summation of all delay times -- excluding CPU consumption -- from the InTune measurement. Total Delay Time abs. sec. is the total delay time belonging to the transaction in absolute seconds.

Alert State

Alert state in abbreviated format.

O	Open
R	Review
C	Close

Alerts can be viewed by selecting the transaction with line command AL. If the Alert State column is blank, no alert exists for the transaction.

Transaction History

To display an overview of all available historical information regarding a transaction, selecting a transaction with line command **TO** will display the Transaction History Overview panel. By default, the most recent three months of information will be displayed. Up to 18 months of information can be displayed by changing the value in the Show Recent Months field.

```

APCGP011 -- AQM-APC - Transaction Overview ----- Row 1 to 6 of 6
COMMAND ===>                                     SCROLL ==> CSR

Transaction   : BT55                               Show recent months: 03

LC Date       System      Total CPU time   Total Delay time
              %           abs sec          %           abs sec
-----
 2002.03.06   CICS0005   14.67          100          14.00         305
 2002.03.05   CICS0005   15.23           66          12.28         260
 2002.03.01   CICS0005   22.66          131          17.29         387
 2002.02.27   CICS0005   18.27           81          15.05         326
 2002.02.26   CICS0005   15.59           69          12.56         268
 2002.02.15   CICS0005   13.55          137          11.69         753
***** Bottom of data *****

```

Panel APCGP011: Transaction Overview

 **Note:** Historical figures are comparable only if the measurements are done regularly. This means measurements must always be at the same time of day and using the same parameters (i.e. target sample size and estimated run time).

General Module Information

The General Module Information panel is displayed when option **2** is chosen on the CICS Feature Menu.

```

APCGP002 -- AQM-APC CICS Feature - General Module Information -- Row 6 from 82
COMMAND ===>                                SCROLL ===> CSR

Module      : *                               Date: 2002.03.06                               System: *
Commands   : SORT M/SY/C%/CA/L - Module/SYS/Cpu%/CpuA/Linkdate
Line Commands: MO - Module overview    MS - Module statement

LC Module   SYSTEM   Total CPU time   Linkdate   16   Module
  name      %         abs sec          MB     Statements
-----
DFHEISR    CICS0012  11.37         60   2001.12.22  >
**N/A**    CICS0006  29.50         40
DFHSIP     CICS0010   8.78          24   2000.09.13  >
DFHSUWT    CICS0005   3.37          23   2001.09.13  >
DFHSIP     CICS0007   8.57          21   2000.11.02  >
DFHSIP     CICS0005   2.61          18   2000.11.03  >
DFHAIP     CICS0012   2.73          14   2001.07.29  <
DFHSIP     CICS0006   9.82          13   2001.09.13  >
.COMMON    CICS0005   1.74          12
.NUCLEUS   CICS0010   4.44          12
DFHD2EX1   CICS0005   1.74          12   2001.11.30  >
DFHPGDM    CICS0012   2.06          11   2000.07.20  >
.NUCLEUS   CICS0007   4.05          10
DFHPGDM    CICS0010   3.47          10   2001.07.20  >

```

Panel APCGP002: General Module Information

The General Module Information panel presents an overview of information about modules for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific module displayed in the list.

Type this: **To do this:**

MO Display an overview of historical information regarding the module.

MS Display module statements.

Fields

Module

To reduce the number of modules displayed, enter a specific name or part of a name. Generic notation is allowed using "*" as a wild card, e.g., entering "A*" will show the information of all modules beginning with "A". By default, all modules measured during the last measurement date are displayed.

Date

To select a specific date with which you would like to compare the current information, enter a date. The default date is the last measurement date.

System

The System field contains the name of the system representing the CICS region in which the transactions run. To display only the information of a certain system, change the name in the System field on the CICS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns

Module name

Name of the module.

System

Name of the system representing the CICS region in which the module runs.

Total Delay time %

Total delay time is the AQM-APC summation of all delay times -- excluding CPU consumption -- from the InTune measurement. Total Delay Time % is the percentage of total delay time belonging to the module.

Total Delay time abs. sec

Total delay time is the AQM-APC summation of all delay times -- excluding CPU consumption -- from the InTune measurement. Total Delay Time abs. sec. is the total delay time belonging to the module in absolute seconds.

Linkdate

Linkage date of the module. This information is available only if:

- The Central Component is used to scan the load libraries containing the online modules (recommended) **or**
- You have a separate run of a Central Component job just for searching the online modules (see step APCXALMO of job APCXJLIB).

See the *AQM-APC Administrator's Guide* for details regarding job APCXJLIB.

16 MB Line

A greater than value ">" means that the module runs above the 16 MB line, a less than value "<" means the module runs below the 16 MB line.

Module Statements

Number of module statements (location addresses) exceeding the threshold values defined on the General Parameters panel as described in the *AQM-APC Administrator's Guide*.

Module History

To display an overview of all available historical information regarding a module, select a module using line command **MO**.

```

APCGP022 -- AQM-APC - General Module Overview ----- Row 1 to 2 of 2
COMMAND ===>                                     SCROLL ===> CSR

Module      : DFHEISR                               Show recent months: 03
Line Commands: MS - Module statement

LC Date      System   Total CPU time   Linkdate   16   Module
              %      abs sec                    MB   Statements
-----
  2002.03.06  CICS0012  11.37          60    2002.12.22  >
  2002.02.27  CICS0012   6.60           4    2002.12.22  >
***** Bottom of data *****

```

Panel APCGP022: General Module Overview

Module Statements

To display module statements in descending CPU time order, select a module using line command **MS**.

```

APCDP201 --- AQM-APC - Module Statements ----- Row 1 to 7 of 7
COMMAND ===>                                     SCROLL ===> CSR

Module       : CMRJRNL9           Date: 2002.02.22           System: CICS001

              Total CPU time   Starting
              %    abs sec     location
-----
Total module: 9.26    1,742
Threshold   : 0.02
-----
              0.57    12    0002C0
              0.21    4    000300
              0.08    2    000280
              0.08    2    000380
              0.07    1    000340
              0.03    1    000240
              0.02    0    000440
***** BOTTOM OF DATA *****

```

Panel APCDP201: Module Statements

The Module Statements panel displays the starting addresses of module statements in descending CPU time order. The top 10 modules statements are listed. Also displayed are module name, measurement date, and system.

Columns

Total CPU time

Displays the total CPU consumption of the statement as a percentage and in absolute seconds. Also displayed is the threshold value for module statements. For details regarding thresholds, refer to the *AQM-APC Administrator's Guide*.

Starting Location

Displays the starting location of the module statements that exceed the threshold value. Up to ten location addresses are shown.

Plan - SQL Information

The Plan panel is displayed when option **3** is chosen on the CICS Feature Menu.

```

APCGP003 --- AQM-APC CICS Feature - Plan ----- Row 1 from 1
COMMAND ===>                                SCROLL ===> CSR

Plan      : *                Date: 2002.02.22                System: *
Commands  : SORT P/SY/C%/CA - Plan/SYstem/Cpu%/CpuAbs.
Line Commands: PO - Plan overview  SS - SQL statements

LC Plan      System      Total CPU time
                        %      abs sec
-----
      XXI09FM  CICS001      1.25      26
***** Bottom of data *****

```

Panel APCGP003: Plan Information

The Plan panel presents an overview of plans for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific plan displayed in the list.

Type this: To do this:

- | | |
|----|--|
| PO | Display an overview of historical information regarding the plan. |
| SS | Display the SQL statements in the plan that exceed the threshold values. |

Fields

Plan

To reduce the number of plans displayed on the panel, enter a specific plan name or a generic plan name. Generic notation is allowed using "*" as a wild card, e.g., enter "A*" to display the information for all plans beginning with "A". By default, all plans measured during the last measurement date are displayed.

Date

To choose a specific date with which you would like to compare the current information, enter the date. The default date is the last measurement date.

System

The System field contains the name of the system representing the CICS region in which the plan runs. To display only the information of a certain system, change the name in the System field on the CICS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns

Plan name

Name of the plan.

System

Name of the system representing the CICS region in which this plan runs.

Total CPU time %

Percent of CPU utilization of the plan within the system.

Total CPU time abs sec

CPU utilization of the plan in absolute seconds.

Plan Overview

To display an overview of historical information for a specific plan, select the plan using line command **PO**.

```

APCGP032 --- AQM-APC - Plan Overview----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

Plan          : XXI09FM                        Show recent months: 03
Line Commands: SS - SQL statements

LC  Date          System      Total CPU time
      %          abs sec
-----
    2002.02.22  CICS001        2.32         28
***** Bottom of data *****

```

Panel APCGP032: Plan Overview

The Plan Overview panel displays a historical overview of the measurement information for a specific plan.

Using the Panel

- To view more or less information for the plan, use the Show Recent Months field to define the number of months for which information should be displayed
- Use line command **SS** to display the SQL statements in the plan that exceed the threshold values.

SQL Statements Exceeding Thresholds

SQL statements that exceed the threshold values can be displayed by:

- Selecting a specific plan using line command **SS** on the Plan panel, or
- Selecting a history record for a plan using line command **SS** on the Plan Overview panel.

```

APCGP203 --- AQM-APC - SQL Statements ----- Row 7 from 7
COMMAND ===>                                SCROLL ===> CSR

Line Commands:  S - Show total SQL Stmt

Plan          : XXI09FM          Date: 2002.02.22          System: CICS001
LC            Total CPU time STMT Action SQL statement
              %   abs sec          (short form)
-----
Total Plan:   1.00           1
Threshold :   0.02

-----
          0.06           1  3135 DELETE DELETE FROM AMT.VAMKTV WHERE LOG_PART=:
          0.02           0  3231 INSERT INSERT INTO AMT.VAMKTA (LOG_PART,AUF_LOG
          0.01           0  3036 SELECT SELECT PARTNERKENNZEICHEN,UNTER_LIEF,A.
          0.01           0  3079 DELETE DELETE FROM AMT.VAMKTA WHERE LOG_PART=:
          0.01           0  2133 DELETE DELETE FROM AMT.VAMAAA WHERE ABW_AUFTR_
          0.01           0  3274 DELETE DELETE FROM AMT.VAMAPB WHERE SNR=:H AND
          0.01           0  3279 UPDATE UPDATE AMT.VAMAPB SET BEDARF_STAT='2' W
***** BOTTOM OF DATA *****

```

Panel APCGP203: SQL Statements

The SQL Statements panel shows the plan name, measurement date, system, and the total CPU consumption and the threshold value for the plan statements. Up to ten SQL statements are shown that exceed the threshold value. For each statement, the CICS Feature presents the CPU consumption (in % of the CICS region and in seconds), the action and the first part of the SQL statement.

Using the Panel

Line commands can be used to work with a specific SQL statement displayed in the list.

Type this: **To do this:**

S Show the complete SQL statement. Use of this command is illustrated on the next page.

To view the complete SQL statement, select the statement using line command S. A window will open which contains up to 200 more characters of information regarding the selected statement as illustrated below.

```

APCGP203 --- AQM-APC - SQL Statements ----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

Line Commands:  S - Show total SQL Stmt

Plan          : XXI09FM          Date: 2002.02.22          System: CICS001

APCDP295 S Q L Statement
SELECT PARTNERKENNZEICHEN, UNTER_LIEF, A. PARTNER_KEZ, A. AUF_LOG_PART, A. ABW_AUFTR
R_NR, DATE (DAT_ERSTELL), K  EZ_VERSANDANW, KEZ_LIEFANZ, DAT_PACK_IST, TERM_VERLAD
E_SOLL, TERM_VERLADE_IST, VERSAND_SOLL, VERSAND_I  ERL_TRANSPM, VERS_PUFF

-----
S          0.06          1  3135 DELETE DELETE FROM AMT.VAMKTV WHERE LOG_PART=:
          0.02          0  3231 INSERT INSERT INTO AMT.VAMKTA (LOG_PART, AUF_LOG
          0.01          0  3036 SELECT SELECT PARTNERKENNZEICHEN, UNTER_LIEF, A.
          0.01          0  3079 DELETE DELETE FROM AMT.VAMKTA WHERE LOG_PART=:
          0.01          0  2133 DELETE DELETE FROM AMT.VAMAAA WHERE ABW_AUFTR_
          0.01          0  3274 DELETE DELETE FROM AMT.VAMAPB WHERE SNR=:H AND
          0.01          0  3279 UPDATE UPDATE AMT.VAMAPB SET BEDARF_STAT='2' W
***** BOTTOM OF DATA *****

```

Panel APCGP203: Panel showing a selected SQL statement

PSB - DLI Information

The PSB panel is displayed when option 4 is chosen on the CICS Feature Menu.

```

APCGP004 --- AQM-APC CICS Feature - PSB ----- Row 1 from 1
COMMAND ===>                                SCROLL ===> CSR

PSB      : *                Date: 2002.02.22                System: *
Commands : SORT P/SY/C%/CA - Psb/SYS/Cpu%-Abs
Line Commands: PO - PSB overview   DS - DLI statements

LC  PSB      System      Total CPU time
      %      abs sec
-----
      XXGMV2M    CICS001    0.62      31
***** Bottom of data *****

```

Panel APCGP004: PSB Information

The PSB panel presents an overview of PSB information for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific PSB displayed in the list.

Type this: To do this:

PO Display historical information regarding a specific PSB.

DS Display the top 10 DLI statements exceeding the thresholds.

Fields

PSB

To filter the PSBs that are displayed, enter a specific PSB name or a generic PSB name. Generic notation is allowed using "*" as a wild card, e.g., enter "A*" to display the information for all PSBs beginning with "A". By default, all PSBs measured during the last measurement date are displayed.

Date

To select a specific date with which you would like to compare the current information, enter the date. The default date is the last measurement date.

System

The System field contains the name of the system representing the CICS region in which the transactions run. To display only information from a certain system, change the name in the System field on the CICS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns

PSB name

Name of the PSB.

System

Name of the system representing the CICS region in which this module runs.

Total CPU time %

Percent of CPU utilization of the module within the CICS system. This percentage reflects the total of all CPU time accumulated from all measurements taken during the time range specified on the System Control panel. Refer to the *AQM-APC Administrator's Guide* for more details about this time range.

Total CPU time abs sec

CPU utilization of the module in seconds.

PSB History Information

To display historical information for a specific PSB, select the PSB using line command **PO**.

```

APCGP042 --- AQM-APC - PSB Overview----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

PSB          : XXGMV2M                        Show recent months: 03
Line Commands: DS - DLI statements

LC  Date          System      Total CPU time
      %          abs sec
-----
    2002.02.22   CICS001      0.33          16
***** Bottom of data *****

```

Panel APCGP042: PSB Overview

The PSB Overview panel displays a historical overview of the measurement information for a specific PSB.

Using the Panel

- To view more or less information for the PSB, use the Show Recent Months field to define the number of months for which information should be displayed.
- Use line command **DS** to display the top 10 DLI statements exceeding the thresholds.

DLI Statements

DLI statements that exceed the threshold values can be displayed by:

- Selecting a specific PSB using line command **DS** on the PSB panel, or
- Selecting a history record for a PSB using line command **DS** on the PSB Overview panel.

```

APCGP204 --- AQM-APC - DLI Statements ----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

PSB          : XXGMV2M          Date: 2002.02.22          System: CICS001

Call          Total CPU      Total Wait      Resource SSA
              % abs sec      % abs sec
-----
Threshold    : 0.02
-----
GU           1.00      10   0.12      0   IOPCB

```

Panel APCGP204: DLI Statements

The DLI Statement panel displays the PSB name, measurement date, system, and the threshold value for DLI statements. Up to ten DLI statements are shown that exceed the threshold value. Displayed for each statement are the name of the calling transaction, the CPU and Wait Time consumption (in % of the CICS region and in seconds), resource and SSA information.

Overview of InTune Measurement Reports

The OVERVIEW option of the CICS Feature Menu displays different InTune chapters of a measurement report. The default entry is #SJS. However, users can also choose from the following table of InTune chapters.

Chapter ID	Overview Description
#SJS	Sampler and Job Statistics
#RDC	Resource Demand Chart
#COV	Code View
#DSA	Dataset Activity
#TXV	Transaction View
#POV	Pool View

#SJS - Sampler and Job Statistics

To display a chapter in the InTune measurement report (Sampler and Job Statistics is used here for illustration), on the IMS Feature Menu select option 5 and enter the chapter ID (#SJS is the default chapter). The first page of the chapter will be displayed as illustrated on the following panel.

```

APCDP005 InTune(R) Meas. - SAMPLER AND JOB STATISTICS ----- Row 1 to 18 of 21
COMMAND ===>                                     SCROLL ===> CSR

Object   : O O/D/S - Overview/Date/System         Direction: F F/B - Forward/Backward
Overview: #SJS                                   Date: 2002.03.06                 System/Jobname: CICS0005/CICSP5

SAMPLER STATISTICS
-----
MONITOR DATA SET:  XXS.INT.IZE0158.CICSP5.D2002065.T0945197
FINAL RATE:         330MSEC   START DATE: 2002/03/06   CICS LVL: 5.2.0
SAMPLES USED:       6000     START TIME: 09:45:19   DB2 LVL: 6.1.0
SAMPLE BALANCE:     1.40     ELAPSED:    00:33:11   IMS LVL:  **N/A**

JOB STATISTICS                                     SYSTEM STATISTICS
-----
JOBNAME:      CICSP5                TCB TIME:    685.42    OS FMID:     SP6.1.0
STEPNAME:     CICSP5                SRB TIME:    52.78    CPU TYPE:    2064
PROCSTEP:     CICS                  ACTIVE%:     24.17    CPU MODEL:   00
PROGRAM:      DFHSIP                WAIT%:       75.82    SERIAL:      116D1
ASID:         0101 (257)            SWAPPED%:    0.00    SMFID:       BSP1
USER ID:      IZE0158              NONDISP%:    0.00    SYS NAME:    BSP1
JOB ID:       STC01696              PROCDLY%:    0.00    OS NAME:     OS/390
<STORAGE:    8.656M                OS LVL:      02.10.00
EXCP-CNT:    270083                >STORAGE:    158.2M   OS OWNER:    IBM CORP

```

Panel APCDP005: Sampler and Job Statistics

The CICS Feature offers a variety of paging alternatives. The normal PF keys for scrolling forward and backwards can be used. Additionally, the Object field and Direction fields can be used in combination to scroll forwards or backwards through different objects.

PF7/ PF8 Backward and forward paging within the actual overview.

Object "O" page through overviews, same date, same CICS system:
Direction: F to page to the next report, B to page to the previous overview.

Object "D": page through date, same overview, same CICS system:
Direction: F to page to the next date, B to page to the previous date.

Order: Date descending, the most recent information is presented first.

Object "S": Page through CICS systems, same overview, same date:
Direction: F to page to the next CICS system, B to page to the previous CICS system.

Order: The system names are presented in AQM-APC internal ID order.

System Information

The System Information panel is displayed when option **6** is chosen on the CICS Feature Menu.

```

APCGP006 --- AQM-APC - System Information ----- Row 1 to 2 of 2
COMMAND ==>                                     SCROLL ==> CSR

                                     Date: 2002.03.26
Commands      : SORT SY/J - SYstem/Jobname
Line Commands: O - Measurement Overview  B - Browse Measurement  P - Print
               PE - Edit      SO - System Overview

LC System   Jobname   Time   Consuming Time   EXCPS   Measurement
            Elps CPU  Wait
-----
CICS001    LBTCICT4   11.22  166    0 165           1           19
CICS002    LBTCICT5   11.26  166    0 165           1           19
***** Bottom of data *****

```

Panel APCGP006: System Information

The System Information panel presents all InTune CICS measurements processed by job APCYJNAR according to the System Control parameters. For every processed CICS measurement, the related system is listed. If defined also under System Control, the measurement can relate to two systems. For more details, refer to the *AQM-APC Administrator's Guide*.

Use this panel to access or print a system's corresponding performance measurement report. Additionally, the measurement report can be edited. Editing might be desirable to add comments, delete lines or sections not to be printed, or temporarily change the JCL print statements.

Using the Panel

- To choose a specific date for which you would like to display information, in the Date field, change the date. The default date is the last measurement date.
- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific system displayed in the list.

Type this: **To do this:**

O	Display an overview of the measurement reports.
B	Browse the InTune measurement report.
P	Print the InTune measurement report.
PE	Edit the InTune measurement report.
SO	Display the System Overview panel with all information for a specific CICS system for a specific time period.

Columns

System

System name (either default or user defined) from the System Control panel.

Jobname

Job name of the CICS startup job.

Time

Start time of the InTune measurement.

Consuming Time in Minutes - Elps

Elapsed time of measurement.

Consuming Time in Minutes - CPU

Total CPU time consumed during measurement.

Consuming Time in Minutes - Wait

Total wait time consumed during measurement.

EXCPs

Total EXCPs -- in thousands -- performed during measurement.

Measurement Samples

Total samples in thousands processed by InTune during measurement.

System Overview

The System Overview panel is displayed when a CICS system is selected on the System Information panel using line command **SO**.

```

APCGP062 --- AQM-APC - System Overview ----- Row 1 to 14 of 27
COMMAND ===>                                SCROLL ===> CSR

System      : CICS001                          Show recent months: 03
Line Commands: O - Measurement Overview      B - Browse Measurement  P - Print
              PE - Edit

LC Date      Jobname    Time    Consuming Time    EXCPS  Measurement
              Elps CPU  Wait     Elps CPU  Wait     Samples
-----
2002.03.26  LBTCICT4    11.22  166     0  165         1         19
2002.03.26  LBTCICT5    11.26  166     0  165         1         19
2002.03.15  GENCIC05     9.01  360    210  301         4         10
2002.03.15  GENCIC06     9.01  360    208  316         0         10
2002.03.15  GENCIC07     9.01  360    210  297         0         10
2002.03.15  GENCIC14     9.01  360    210  297         0         10
2002.03.14  GENCIC05     9.01  360     10  301         4         10
2002.03.14  GENCIC06     9.01  360     8  316         0         10
2002.03.14  GENCIC07     9.01  360     10  297         0         10
2002.03.14  GENCIC14     9.01  360     10  297         0         10
2002.02.26  LBTCICT4    11.22  166     0  165         1         19
2002.02.26  LBTCICT5    11.26  166     0  165         1         19
2002.02.26  X99CIC1     11.26   16     0   15         1          4
2002.02.26  X99CIC2     11.26   16     2   15         1          4

```

Panel APCGP062: System Overview

The System Overview panel displays all date specific information for a specific CICS system. The Show Recent Months field can be used to limit the information to the current month (Show Recent Months = 1) or to display all information available up to 18 months (Show Recent Months = 18). The default value for Show Recent Months is 3.

Line commands and columns are the same as those described for the System Information panel.

Alert Management

In CICS, there are hundreds of transactions but not all of these transactions need performance monitoring. Many transactions, even though they may be high consumers, only execute occasionally and do not warrant concern.

For each execution of the CICS Feature, important top consuming transactions can be automatically identified and alerted. This works in two steps:

1. The top number of consuming transactions are identified based on the scope defined as a parameter, e.g., TOP Limit = 10. This parameter is maintained by your administrator.
2. Within this TOP Limit, the current execution consumption values of the transactions are compared to the statistical information maintained for the same transactions on the AQM-APC database. If the actual consumption exceeds the statistical limits, an alert is automatically issued -- referred to as a statistical alert.

Additionally, the AQM-APC user (APM Team) can manually issue alerts explicitly for transactions using the online Alert Management option -- referred to as user alerts.

The Alert Management option provides all the information necessary for the APM Team to handle the alert. Information is provided in the form of state and reason codes that identify the situation.

How the TOP Limit Works

In order to use the Alert Management option of the CICS Feature, the TOP Limit of work must be defined. TOP Limit processing works for each defined CICS system in AQM-APC. It is the last step in the total system handling. The TOP Limit is maintained by the AQM-APC administrator. It can contain a value from 0 to 999. A value of 0 deactivates the TOP Limit, thus deactivating Alert Management. Otherwise, the TOP Limit number defines how many important transactions are to be statistically observed.

Within the TOP Limit -- meaning the number defined as a parameter -- all transactions of the current system will be statistically observed and, at the end, a runaway test check is performed. The statistical limits are based on up to eighteen months of stored interpreted profiles. To determine the TOP consumer and issue alerts, one of two conditions normally exists:

- Transaction consumption is static. A standard deviation check is done and if the result indicates an increase in the consumption (runaway), an alert is issued.
- Transaction consumption is not static. A standard deviation check is done and if the result indicates a drastic increase in the consumption (runaway), an alert is issued.

If there is a runaway situation, the transaction will be added to the Alert file with the state OPEN and the reason STAT. Alerts can be viewed under the Alert Management dialog.

Note: The range of the statistical observation is limited to one year. For a transaction to be alerted, it must have been observed in at least three separate *STROBE* profiles collected during the period of statistical observation.

Alert List Information TRX

The Alert List panel is displayed when option 7 is chosen on the CICS Feature Menu or when line command **AL** is used on the Transaction Information panel.

```

APCDP007 --- AQM-APC CICS Feature - Alert List - All Issued ---- ROW 1 from 15
COMMAND ===>                                SCROLL ===> CSR

Transaction  : *                               State: *
Commands     : SORT T/SY/S/A/D - Tran/System/State/Aid/Date
              : REV -list review  OPEN -open  ALL -issued  RECENT -most recent
Line Commands: TO -Tran Ov.  S -Show  R -Review  C -Close  D -Delete  I -Insert
    
```

LC	Traname	System	State	Reason	AID	Issue Date	No.Al.
	VSIB	CICS0002	REV	STAT	15353	2002.08.02	1
	VSCO	CICS0002	OPEN	STAT	15352	2002.08.02	1
	VNAF	CICS0002	OPEN	STAT	15350	2002.08.02	1
	UWGC	CICS0002	OPEN	STAT	15349	2002.08.02	1
	SH21	CICS0002	OPEN	STAT	15348	2002.08.02	1
	PN\$1	CICS0002	OPEN	STAT	15347	2002.08.02	1
	IUAQ	CICS0002	OPEN	STAT	15345	2002.08.02	1
	P140	CICS0001	OPEN	STAT	15342	2002.08.02	1
	LZ27	CICS0001	OPEN	STAT	15340	2002.08.02	1
	LZ15	CICS0001	OPEN	STAT	15339	2002.08.02	1
	LZ14	CICS0001	OPEN	STAT	15338	2002.08.02	1
	LZ11	CICS0001	OPEN	STAT	15337	2002.08.02	1
	LZ09	CICS0001	OPEN	STAT	15336	2002.08.02	1

Panel APCDP007: Alert List -- All Issued

If a TOP Limit has been identified, any transaction within the TOP Limit that is found to exceed its statistical limits will automatically be alerted. Refer to the *AQM-APC Administrator's Guide*.

Use the Alert List panel to see an overview of all alerts along with all state codes and reason codes. The state code identifies the current state of the alert, e.g., whether the alert is open, reviewed, or closed. The reason code identifies why the alert was issued, i.e., statistical limits were exceeded or user alerted.

Using the Panel

- To filter the data listed on the panel, use the Transaction and/or State fields as described below in the Fields section.
- Primary commands can be used as follows:

Type this: **To do this:**

REV View alerts with STATE = REV.

OPEN View alerts with STATE = OPEN.

ALL View all alerts.

RECENT View the most recent occurrence of each alert.

SORT If you need details regarding how to use SORT commands, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific alerted transaction displayed in the list.

Type this: To do this:

TO	Display the Transaction Overview panel.
S	Show the Alert.
R	Review and edit the Alert text. The state is changed to REV.
C	Close an Alert. The state is changed to CUSE and can no longer be reviewed.
D	Delete an Alert.
I	Insert a new Alert.

Input Fields

Transaction

To control the list of alerts being displayed, enter an actual transaction name or a generic transaction name. Generic character asterisk "*" can be used to list all alerts for all transactions or to limit the list of alerts to a generic group of transactions.

State

To reduce the list of alerts to a specific state, enter the state of the alerts to be displayed. You can enter a valid state code, the first letter of the state code plus an asterisk, or an asterisk alone to see all states of alert.

The following state codes are possible:

Table 11: Alert State Codes

State Code	Short Desc.	Long Description
OPEN	Open	An open state indicates a new alert has been opened automatically by AQM-APC or by a user.
REV	Review	A review state code stops further measurements for the transaction. An open alert can be changed to REV by selecting the alert using line command R . This allows you to review the alert and changes the alert to state code REV.
CLOSE	Closed	A closed state code indicates the completion of an alert process.

Columns

Traname/System

The specific transaction and system for which the alert is issued.

State

The current state of the alert. See the table on the preceding page for a detailed description of the valid state codes.

Reason

The current reason for the alert. The following reason codes are valid:

Table 12: Alert Reason Codes

Reason Code	Short Desc.	Long Description
USER	User	The alert was issued by an AQM-APC user. See alert text for explanation.
STAT	Statistics	The alert was automatically issued by AQM-APC because the transaction exceeded its normal statistical limits.

AID

A unique alert identification is given to each alert.

Issue Date

The date the alert was issued.

No. Al.

The number of alerts for this transaction. If more than one alert exists and you want to delete the alert for this transaction, each alert must be individually deleted using line command **D**.

Show, Review, or Insert an Alert

The following panel is displayed as a result of one of these actions:

- A transaction was selected on the Alert List panel using line command **S** or **R**.
- To insert a user Alert for a specific transaction, line command **I** was used on the Alert List panel or line command **AI** was used on the Transaction Information panel.

```

APCDP701  AP04506.APCX.TEMP1 ----- Columns 001 072
COMMAND ==>                                SCROLL ==> CSR
SAVE = END command or PF3          CANCEL = CAN command
Transaction System   Alerts   State   AID
VSIB                CICS0002   1     OPEN   15353
-----
***** ***** Top of Data *****
000001 2002-08-02 APC ALERT ID 15353 BY STAT
000002
000003          TRANSACTION : VSIB          SYSTEM : CICS0002   PGM : CIC1CIC2
000004          CPU% MEAS : 2.00  AVERAGE : .95  STD.DEV : .27
000005          -----
***** ***** Bottom of Data *****

```

Panel APCDP701: Show/Review/Insert Alert Panel

When selected with **S** or **R** this panel details the alert situation for the specific transaction by displaying all text information that is either created automatically by AQM-APC or documented by the user.

The alert is identified by the transaction name. Additionally, the number of alerts, status code, reason codes, identifier, and creation date are listed.

Using the Panel

- In Review mode (line command **R**), you are allowed to edit text up to the maximum of 102 lines. The alert state is changed to REV when it is reviewed using line command R.
- In Insert mode (line command **I** or **AI**), you are allowed to insert a user alert and can create up to 102 lines of alert text. The alert state will be OPEN with reason code USER.
- In both Review and Insert modes, the text is saved in the AQM-APC database and is available anytime for displaying or for documenting further information. The text is erased if you use the delete command for the alert on the Alert List panel.
- To cancel any changes, enter the CAN (cancel) command. Changes in the text will be ignored and the state of the alert will not be changed.

Alert List Information changed Modules

The Alert List panel is displayed when option **8** is chosen on the CICS Feature Menu or when line command **AL** is used on the Transaction Information panel.

```
APCDP008 ----- AQM-APC CICS Feature - Alert List Changed modules - Row 1 from 15
COMMAND ==>>>                                     SCROLL ==>> HALF
```

```
Module      : *                               State: *
Commands    : SORT M/SY/S/A/D/L/U - Module/System/State/Aid/Date/Linkdate/Uid
              : REV -list review OPEN -open ALL -issued RECENT -most recent
Line Commands: MO -Mod.Ov.  S -Show R -Review C -Close D -Delete I -Insert
```

LC	Module	System	State	Reason	AID	Issue Date	Link Date	By (UID)
	ASMTDLI	*ONLINE*	PEND	MODC	1	2002.04.26	2002.11.12	*AQMAPC*
	ASMTDLI1	*ONLINE*	PEND	MODC	2	2002.04.26	2002.11.12	*AQMAPC*
	ASMTDLI2	*ONLINE*	PEND	MODC	3	2002.04.26	2002.11.12	*AQMAPC*
	ASMTDLI3	*ONLINE*	PEND	MODC	4	2002.04.26	2002.11.12	*AQMAPC*
	ASMTDLI4	*ONLINE*	PEND	MODC	5	2002.04.26	2002.11.12	*AQMAPC*
	CBLTDLI	*ONLINE*	PEND	MODC	6	2002.04.26	2002.11.12	*AQMAPC*
	CBLTDLI1	*ONLINE*	PEND	MODC	7	2002.05.10	2002.11.12	*AQMAPC*
	CBLTDLI2	*ONLINE*	PEND	MODC	8	2002.05.10	2002.06.09	*AQMAPC*
	CBLTDLI3	*ONLINE*	PEND	MODC	9	2002.04.26	2002.11.12	*AQMAPC*
	CBLTDLI4	*ONLINE*	PEND	MODC	10	2002.04.26	2002.11.12	*AQMAPC*

Panel APCDP008: Alert List Changed modules

The function works similar to the Batch Changed Module processing. The scanprocess activated by Job APCXJLIB, Step APCXALMO, was enhanced to detect if the module is a CICS-, IMS- or Batch-module. For changed CICS-modules now a PENDING alert will be created. Different to Batch the alerts are shown based on the module name with the global entry *ONLINE* for the CICS-Systemname. The alert entries will be considered in the next CICS measurement result processing. The state of a PENDING alert belonging to a module which was active during the measurement will be changed to OPEN or to CTHR (Closed bei THResholds). More to CTHR under **DEFINING THRESHOLDS in the Administrator's Guide**. Was the module called in different systems the alert entry is duplicated for each system the module was active during the measurement.

Use the Alert List panel to see an overview of all alerts along with all state codes and reason codes. The state code identifies the current state of the alert, e.g., whether the alert is open, reviewed, or closed. The reason code identifies why the alert was issued, i.e., statistical limits were exceeded or user alerted.

Using the Panel

- To filter the data listed on the panel, use the Transaction and/or State fields as described below in the Fields section.
- Primary commands can be used as follows:

Type this: **To do this:**

REV View alerts with STATE = REV.

OPEN View alerts with STATE = OPEN.

- ALL** View all alerts.
- RECENT** View the most recent occurrence of each alert.
- SORT** If you need details regarding how to use SORT commands, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific alerted transaction displayed in the list.

Type this: To do this:

- TO** Display the Transaction Overview panel.
- S** Show the Alert.
- R** Review and edit the Alert text. The state is changed to REV.
- C** Close an Alert. The state is changed to CUSE and can no longer be reviewed.
- D** Delete an Alert.
- I** Insert a new Alert.

Input Fields

Transaction

To control the list of alerts being displayed, enter an actual transaction name or a generic transaction name. Generic character asterisk '*' can be used to list all alerts for all transactions or to limit the list of alerts to a generic group of transactions.

State

To reduce the list of alerts to a specific state, enter the state of the alerts to be displayed. You can enter a valid state code, the first letter of the state code plus an asterisk, or an asterisk alone to see all states of alert.

The following state codes are possible:

Table 13: Alert State Codes

State Code	Short Desc.	Long Description
OPEN	Open	An open state indicates a new alert has been opened automatically by AQM-APC or by a user.
REV	Review	A review state code stops further measurements for the transaction. An open alert can be changed to REV by selecting the alert using line command R . This allows you to review the alert and changes the alert to state code REV.
CLOSE	Closed	A closed state code indicates the completion of an alert process.

Columns

Traname/System

The specific transaction and system for which the alert is issued.

State

The current state of the alert. See the table on the preceding page for a detailed description of the valid state codes.

Reason

The current reason for the alert. The following reason codes are valid:

Table 14: Alert Reason Codes

Reason Code	Short Desc.	Long Description
USER	User	The alert was issued by an AQM-APC user. See alert text for explanation.
STAT	Statistics	The alert was automatically issued by AQM-APC because the transaction exceeded its normal statistical limits.

AID

A unique alert identification is given to each alert.

Issue Date

The date the alert was issued.

No. Al.

The number of alerts for this transaction. If more than one alert exists and you want to delete the alert for this transaction, each alert must be individually deleted using line command **D**.

Show, Review, or Insert an Alert

The following panel is displayed as a result of one of these actions:

- A transaction was selected on the Alert List panel using line command **S** or **R**.
- To insert a user Alert for a specific transaction, line command **I** was used on the Alert List panel or line command **AI** was used on the Transaction Information panel.

```

COMMAND ==>>                                SCROLL ==>> HALF
SAVE = END command or PF3          CANCEL = CAN command
Module      System      Alerts   State   AID
CBLTDLI2   CICS0003      1     OPEN   8
-----
***** Top of Data *****
2002-05-10 APC ALERT ID 00008      BY MODC      LINK: 2002-05-09
-----
MODULE : CBLTDLI2 SYSTEM: *ONLINE*
-----
2002-05-12 APC ALERT ID 00008      BY MEAS      MEAS-DATE: 2002-11-05
-----
MODULE: CBLTDLI2  SYSTEM: CICS0003  -CALLED BY    5 TRX-
MODULE-COUNTS:   2345  CPU %:   1.63  LOADED: ABOVE 16MB
-----
THRES.-COUNTS:    0  -CPU %:   0.00  REACHED >OPEN<
-----
***** Bottom of Data *****

```

Panel APCDP801: Show/Review/Insert Alert Panel

When selected with **S** or **R** this panel details the alert situation for the specific transaction by displaying all text information that is either created automatically by AQM-APC or documented by the user.

The alert is identified by the transaction name. Additionally, the number of alerts, status code, reason codes, identifier, and creation date are listed.

Using the Panel

- In Review mode (line command **R**), you are allowed to edit text up to the maximum of 102 lines. The alert state is changed to REV when it is reviewed using line command R.
- In Insert mode (line command **I** or **AI**), you are allowed to insert a user alert and can create up to 102 lines of alert text. The alert state will be OPEN with reason code USER.
- In both Review and Insert modes, the text is saved in the AQM-APC database and is available anytime for displaying or for documenting further information. The text is erased if you use the delete command for the alert on the Alert List panel.
- To cancel any changes, enter the CAN (cancel) command. Changes in the text will be ignored and the state of the alert will not be changed.

Exporting CICS Feature Data - Job APCCJEXP

With job APCCJEXP, data that is stored within the CICS Feature can be exported for use in other systems, e.g., EXCEL, SAS. The data is exported from the AQM-APC database to a sequential file that can be used in other systems or downloaded to the PC, e.g., via file transfer.

The following is an illustration of the JCL for this job.

```
//jobcard.....
/*=====
/* JOB TO   EXTRACT   INFORMATION   FROM   CICS   POOL           *
/*                COPYRIGHT   APM   AG   ZURICH                 *
/*=====
//APCDATAB  EXEC   PGM=APCDATAB
//STEPLIB  DD   DSN=prefix.AQMAPC.LOAD,DISP=SHR
//APCIPRO1 DD   DSN=DUMMY,
//                DISP=SHR
//APCCPRO1 DD   DSN=prefix.AQMAPC.KSDSCIC,
//                DISP=SHR
//APCIN    DD   DSN=prefix.AQMAPC.CNTL(APCCCEXP),DISP=SHR
//APTAB    DD   SYSOUT=*
```

JCL for Job APCCJEXP

The scope of the data to be exported is defined within this job by using input parameters in member APCCCEXP of the product CNTL library. The information to be exported is specific to transactions, modules, plans, and PSBs. See Table 15 on the next page. To assist you in using this information once it has reached its destination, the following record layout illustrations are provided. Each field of the record is separated by a semicolon delimiter.

Transaction Record

```
DATE;SYSID;TYPE;TXNAME;CPU %;CPU ABS SEC;CPU ABS/TX;CALLS;SERV.TIME;
YYYY.DD.MM;NNN;T;XXXXXXXX;NN.NN;NNNNN;NNN.NN;NNNNNNN;NN.NN;
```

Module Record

```
DATE;SYSID;TYPE;MODULNAME;CPU %;CPU ABS SEC;CPU ABS/CALL;CALLS;
YYYY.DD.MM;NNN;M;XXXXXXXX;NN.NN;NNNNN;NNN.NN;NNNNNNN;
```

Plan Record

```
DATE;SYSID;TYPE;PLANNAME;CPU %;CPU ABS SEC;
YYYY.DD.MM;NNN;D;XXXXXXXX;NN.NN;NNNNN;
```

PSB Record

```
DATE;SYSID;TYPE;MODULNAME;CPU %;CPU ABS SEC;;;WAIT %;TXNAME;PSB;
YYYY.DD.MM;NNN;P;XXXXXXXX;NN.NN;NNNNN;;;00.00;XXXXXXXX;XXXXXXXX;
```

Figure 13: Record Layout for Export File

The following table explains each of the valid APCCCEXP parameters:

Table 15: Parameters for APCCCEXP Member

APCCCEXP Parameters	Opt./Req.	Meaning
DATE FROM YYYYMMDD=	Required	The beginning date from which all data will be exported.
DATE TO YYYYMMDD=	Optional	All data through this date will be exported. Default: Until Last Entry
SUBSYSTEM=	Optional	The subsystem. Default: CICS
SUBID=	Optional	The internal system ID. Default: All subsystem IDs
SYSNAME=	Optional	The name of the system defined in AQM-APC (refer to the <i>AQM-APC Administrator's Guide</i>). Either SUBID <u>or</u> SYSNAME can be used.
INFOTYPE=	Optional	The type of data to be exported: T - Transaction records M - Program records D - DB2 plan data P - PSB records (DLI) Default: All types of data

```
DATE FROM YYYYMMDD=20020101
DATE TO YYYYMMDD=20021001
SUBSYSTEM=CICS
```

Figure 14: Example of Input to APCCCEXP Member

Chapter 5. Using the IMS Feature

This chapter describes how to use the ISPF panels of the IMS Feature and how to export its information.

The following figure illustrates how the System Control of the IMS Feature works:

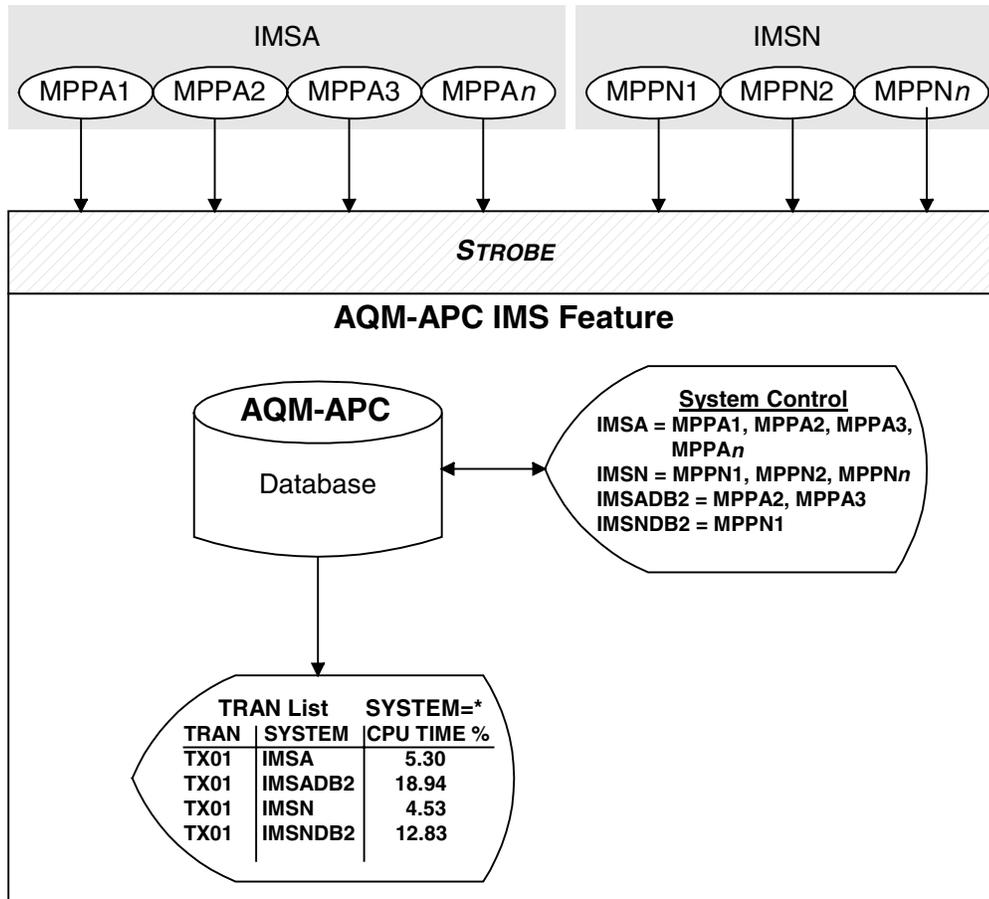


Figure 15: How System Control Works for the IMS Feature

The following flowchart illustrates the layout of the ISPF panels that allow you to perform the online functions of the IMS Feature:

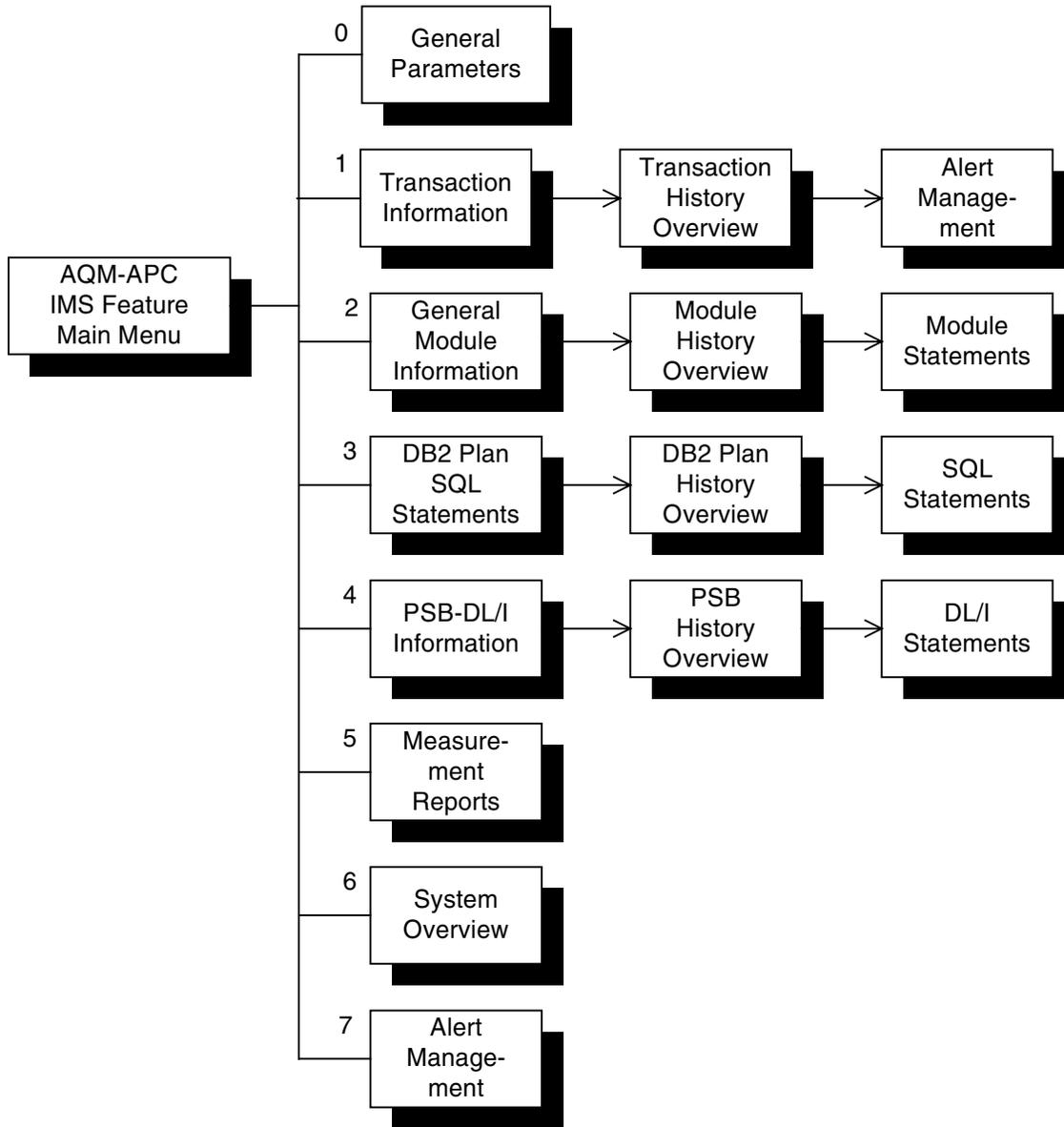


Figure 16: Panel Hierarchy of the IMS Feature

The IMS Feature Menu

The IMS Feature is accessed by starting REXX procedure APC and selecting the IMS Feature option.

```

APCGP000 -- AQM-APC --- IMS Feature Menu ----- Version 4.3.0
OPTION  ===>                                     SYSTEM: *

          0 PARAMETERS      - Define User Specific Jobcard
          1 TRANSACTIONS    - Transaction Info
          2 MODULES         - General Module Info
          3 DB2 PLANS       - SQL Info
          4 PSBS            - DLI Info
          5 OVERVIEWS       - InTune Measurement Extractions #SJS
          6 SYSTEMS         - System Info
          7 ALERTS          - Alert Management
          T TUTORIAL        - Obtain AQM-APC Help
          X or END          - End IMS Feature

(c)2002      A.P.M. AG. All rights reserved.
IMS is a registered trademark of International Business Machines Corp.
InTune is a registered trademark of BMC Software Inc.

```

Panel APCGP000: IMS Feature Menu

To request information for a specific IMS system, enter the name in the SYSTEM field. Otherwise, to show all available information of all measured systems, use the default generic value "*" in the SYSTEM field.

After defining the IMS SYSTEM, to select options on the **IMS Feature Menu**, type one of the following numbers in the OPTION field and press <ENTER>:

-
- 0** Define a user specific jobcard for printing. For details regarding all other system parameters, refer to the *AQM-APC Administrator's Guide*.
 - 1** Display an overview of all available transaction information as of the last measurement day.
 - 2** Display an overview of all available module information as of the last measurement day.
 - 3** Display an overview of all available DB2 plan and SQL information as of the last measurement day.
 - 4** Display an overview of all available DLI information as of the last measurement day.

- 5 Display and work with different reports. Corresponding to this OVERVIEW option is an input field that allows you to ask for a specific report overview. The default is #SJS. The reports and their corresponding identifiers are:

Chapter ID	Overview Description
#SJS	Sampler and Job Statistics
#RDC	Resource Demand Chart
#COV	Code View
#DSA	Dataset Activity
#TXV	Transaction View
#POV	Pool View

To use the OVERVIEW option:

- 4 Place a number 5 in the OPTION field
 - 5 Key the general InTune report identifier in the corresponding overview input field
 - 6 Press <ENTER>.
- 6 Display the System Overview panel.
 - 7 View all alerts issued.
-

Global Print JCL

The Global Print JCL panel is displayed when you choose **0** on the IMS Feature Menu.

```

APCXPP01 --- APC - Global Print JCL -----
COMMAND ==>

Enter your user specific JCL statements used in all AQM-APC
features for Print:

//ABC4506X JOB (5251,Z002,,FI-32),APM,CLASS=A,MSGCLASS=4,NOTIFY=ABC4506
//*
//PRINT      EXEC PGM=IEBGENER
//SYSIN      DD  DUMMY
//SYSPRINT   DD  SYSOUT=*
//SYSUT2     DD  SYSOUT=*
//SYSUT1     DD  *

                Cancel: CAN
                Save  : END OR PF3

```

Panel APCXPP01: Global Print JCL

In order to use the print command of AQM-APC, you must have complete and correct JCL statements for the print job.

Using the Panel

In the lines provided on this panel, define your print job statements. These statements may include:

- Job card
- Local printer
- Specific SYSOUT classes
- Print formats.

Once defined, this print job JCL is used by all AQM-APC features (Central Component, CICS Feature, and IMS feature). This JCL is stored in your individual TSO user profile pool. If you do not save the input to this panel by exiting with PF3 or END, the profile pool is not loaded.

Transaction Information

The Transaction Information panel is displayed when option 1 is chosen on the IMS Feature Menu.

```

APCDP001 -- AQM-APC IMS Feature - Transaction Information ---- Row 1 from 633
COMMAND ==>                                     SCROLL ==> CSR

Transaction : *                               Date: 2002.03.06                               System: *
Commands   : SORT T/SY/C%/CA/CX/TC/S/A - Tx/SYs/Cpu%/CpuA/CputX/Times/Serv/As
Line Commands: TO - TX overview  AL Alert list  AI Alert insert
              TM - TX specific module info  TD - DBRM info  TP - PSB info

```

LC Trans- action	System	Total CPU time %	CPU time abs sec	CPU time abs./TX	Times called	Serv. time	A. Number in S. Mod DBRM PSB
BT55	IMS10005	14.67	100		0	305	
BT60	IMS10005	12.78	88		0	261	
KT37	IMS10012	12.48	66		0	201	
HB99	IMS10005	7.06	48		0	169	
KT44	IMS10012	7.84	42		0	122	
KT37	IMS10010	9.10	25		0	103	
SB20	IMS10012	4.29	23		0	84	
KI86	IMS10012	4.14	22		0	70	
KT37	IMS10007	8.33	21		0	68	
CSTP	IMS10005	2.86	20		0	70	0
KT44	IMS10007	7.86	20		0	61	
DT17	IMS10010	6.93	19		0	71	
KT44	IMS10010	6.39	18		0	66	

Panel APCDP001: Transaction Information

The Transaction Information panel contains an overview of all transaction information for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a particular transaction displayed in the list.

Type this: **To do this:**

TO Display transaction historical information.

AL Display the Alert List panel.

AI Insert a user alert.

Fields

Transaction

Use the Transaction field to limit the amount of transactions that are displayed by entering a transaction name. Generic notation is allowed by using "*" as a wild card, e.g., "A*" will display the information of all transactions beginning with "A". By default, all transactions measured during the last measurement date are displayed.

Date

Use the Date field to choose a specific date that you would like to compare the actual information with. The default is the last measurement date.

System

The System field contains the name of the system representing the IMS region in which the transactions run. To display only the information of a certain system, change the name in the System field on the IMS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns**Transaction**

Name of the transaction.

System

Name of the system representing the IMS region in which the transactions run.

Total CPU time %

Percentage of CPU utilization of the transaction within the system.

Total CPU time abs. sec

Total CPU utilization of the transaction in absolute seconds.

Total Delay time %

Total delay time is the AQM-APC summation of all delay times -- excluding CPU consumption -- from the InTune measurement. Total Delay Time % is the percentage of total delay time belonging to the transaction.

Total Delay time abs. sec

Total delay time is the AQM-APC summation of all delay times -- excluding CPU consumption -- from the InTune measurement. Total Delay Time abs. sec. is the total delay time belonging to the transaction in absolute seconds.

Alert State

Alert state of the transaction.

O	Open
R	Review
C	Close

Alerts can be viewed by selecting the transaction with line command AL. If the Alert State column is blank, no alert exists for the transaction.

Transaction History

To display an overview of all available historical information regarding a transaction, selecting a transaction with line command **TO** will display the Transaction Overview panel.

```

APCGP011 -- AQM-APC - Transaction Overview ----- Row 1 to 6 of 6
COMMAND ==>                                     SCROLL ==> CSR

Transaction   : BT55                               Show recent months: 03

LC Date       System      Total CPU time   Total Delay time
              %           abs sec          %      abs sec
-----
 2002.03.06   IMS10005   14.67          100     14.00     305
 2002.03.05   IMS10005   15.23           66     12.28     260
 2002.03.01   IMS10005   22.66          131     17.29     387
 2002.02.27   IMS10005   18.27           81     15.05     326
 2002.02.26   IMS10005   15.59           69     12.56     268
 2002.02.15   IMS10005   13.55          137     11.69     753
***** Bottom of data *****

```

Panel APCGP011: Transaction Overview

The fields and columns displayed on this panel are the same as those described on the Transaction Information panel, see previous page.

 **Note:** Historical figures are comparable only if the measurements are done regularly. This means measurements must always be at the same time of day and using the same parameters (i.e. target sample size and estimated run time).

General Module Information

The General Module Information panel is displayed when option **2** is chosen on the IMS Feature Menu.

```

APCGP002 -- AQM-APC CICS Feature - General Module Information -- Row 6 from 82
COMMAND ===>                                SCROLL ===> CSR

Module      : *                               Date: 2002.03.06                               System: *
Commands    : SORT M/SY/C%/CA/L - Module/SYS/Cpu%/CpuA/Linkdate
Line Commands: MO - Module overview    MS - Module statement

LC Module   SYSTEM   Total CPU time   Linkdate   16   Module
  name      %         abs sec                MB   Statements
-----
DFHEISR     CICS0012  11.37          60         2001.12.22  >
**N/A**     CICS0006  29.50          40         <
DFHSIP      CICS0010   8.78           24         2000.09.13  >
DFHSUWT     CICS0005   3.37           23         2001.09.13  >
DFHSIP      CICS0007   8.57           21         2000.11.02  >
DFHSIP      CICS0005   2.61           18         2000.11.03  >
DFHAIP      CICS0012   2.73           14         2001.07.29  <
DFHSIP      CICS0006   9.82           13         2001.09.13  >
.COMMON     CICS0005   1.74           12         <          7
.NUCLEUS    CICS0010   4.44           12         <
DFHD2EX1    CICS0005   1.74           12         2001.11.30  >
DFHPGDM     CICS0012   2.06           11         2000.07.20  >
.NUCLEUS    CICS0007   4.05           10         <
DFHPGDM     CICS0010   3.47           10         2001.07.20  >

```

Panel APCGP002: General Module Information

The General Module Information panel presents an overview of module information for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a particular module displayed in the list.

Type this: **To do this:**

MO Display historical information regarding the module.

MS Display the location addresses of the top 10 module statements exceeding the threshold values.

Fields

Module

To reduce the number of modules displayed, enter a specific name or part of a name. Generic notation is allowed using "*" as a wild card, e.g., entering "A*" will show the information of all modules beginning with "A". By default, all modules measured during the last measurement date are displayed.

Date

To select a specific date with which you would like to compare the current information, enter a date. The default date is the last measurement date.

System

The System field contains the name of the system representing the IMS region in which the transactions run. To display only the information of a certain system, change the name in the System field on the IMS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns

Module name

Name of the module.

System

Name of the system representing the IMS region in which the module runs.

Total CPU time %

Percentage of CPU utilization of the module within the system.

Total CPU time abs. sec

CPU utilization of the module in absolute seconds.

Linkdate

Linkage date of the module. This information is available only if:

- The Central Component is used to scan the load libraries containing the online modules (recommended) **or**
- You have a separate run of a Central Component job just for searching the online modules (see step APCBCLMO of job APCXJLIB).

See the *AQM-APC Administrator's Guide* for details regarding job APCXJLIB.

16 MB Line

A greater than value ">" means that the module runs above the 16 MB line, a less than value "<" means the module runs below the 16 MB line.

Module Statements

Number of module statements (location addresses) that exceed the threshold values defined on the General Parameters panel as described in the *AQM-APC Administrator's Guide*.

Module History

To display an overview of all available historical information regarding a module, select a module using line command **MO**.

```

APCGP022 -- AQM-APC - General Module Overview ----- Row 1 to 2 of 2
COMMAND ===>                                     SCROLL ===> CSR

Module      : DFHEISR                               Show recent months: 03
Line Commands: MS - Module statement

LC Date      System   Total CPU time   Linkdate   16   Module
              %      abs sec                MB   Statements
-----
  2002.03.06  IMS10012  11.37          60   2002.12.22  >
  2002.02.27  IMS10012   6.60           4   2002.12.22  >
***** Bottom of data *****

```

Panel APCGP022: General Module Overview

Module Statements

To display module statements that exceed the threshold values defined on the General Parameters panel, select a module using line command **MS**.

```

APCDP201 --- AQM-APC - Module Statements ----- Row 1 to 1 of 1
COMMAND ===>                                     SCROLL ===> CSR

Module      : DFSRRC10          Date: 2002.02.22          System: IMS

              Total CPU time   Starting
              %   abs sec       location
-----
Total module: 2.00           12
Threshold   : 0.02
-----
              0.57           12       0001A0
***** Bottom of data *****

```

Panel APCDP201: Module Statements

The Module Statements panel displays the starting addresses of module statements in descending CPU time order. The top 10 modules statements are listed. Also displayed are module name, measurement date, and system.

Columns

Total CPU time %

Also displayed are total CPU consumption and the threshold value for module statements. For details regarding thresholds, refer to the *AQM-APC Administrator's Guide*.

Starting Location

Displays the starting location of the module statements that exceed the threshold value. Up to ten location addresses are shown.

Plan - SQL Information

The Plan panel is displayed when option **3** is chosen on the IMS Feature Menu.

```

APCGP003 --- AQM-APC IMS Feature - Plan ----- Row 1 from 1
COMMAND ===>                                SCROLL ===> CSR

Plan      : *                               Date: 2002.02.22           System: *
Commands  : SORT P/SY/C%/CA - Plan/SYstem/Cpu%/CpuAbs.
Line Commands: PO - Plan overview   SS - SQL statements

LC Plan      System      Total CPU time
                        %      abs sec
-----
      XXI09FM   IMS          1.25      26
***** Bottom of data *****

```

Panel APCGP003: Plan Information

The Plan panel presents an overview of plans for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific plan displayed in the list.

Type this: **To do this:**

PO Display an overview of historical information regarding the plan.

SS Display the SQL statements in the plan that exceed the threshold values.

Fields

Plan

To reduce the number of plans displayed on the panel, enter a specific plan name or a generic plan name. Generic notation is allowed using "*" as a wild card, e.g., enter "A*" to display the information for all plans beginning with "A". By default, all plans measured during the last measurement date are displayed.

Date

To choose a specific date with which you would like to compare the current information, enter the date. The default date is the last measurement date.

System

The System field contains the name of the system representing the IMS region in which the plan runs. To display only the information of a certain system, change the name in the System field on the IMS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns

Plan

Name of the plan.

System

Name of the system representing the IMS region in which this plan runs.

Total CPU time %

Percent of CPU utilization of the plan within the system.

Total CPU time abs sec

CPU utilization of the plan in absolute seconds.

Plan Overview

To display an overview of historical information for a specific plan, select the plan using line command **PO**.

```

APCGP032 --- AQM-APC - Plan Overview----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

Plan          : XXI09FM                        Show recent months: 03
Line Commands: SS - SQL statements

LC  Date          System      Total CPU time
      %          abs sec
-----
    2002.02.22  IMS          2.32          28
***** Bottom of data *****

```

Panel APCGP032: Plan Overview

The Plan Overview panel displays a historical overview of the measurement information for a specific plan.

Using the Panel

- To view more or less information for the plan, use the Show Recent Months field to define the number of months for which information should be displayed.
- Use line command **SS** to display the SQL statements in the plan that exceed the threshold values.

SQL Statements Exceeding Thresholds

SQL statements that exceed the threshold values can be displayed by:

- Selecting a specific plan using line command **SS** on the Plan panel, or
- Selecting a history record for a plan using line command **SS** on the Plan Overview panel.

```

APCGP203 --- AQM-APC - SQL Statements ----- Row 7 from 7
COMMAND ==>                                     SCROLL ==> CSR

Line Commands:  S - Show total SQL Stmt

Plan          : XXI09FM          Date: 2002.02.22          System: IMS
LC            Total CPU time STMT Action SQL statement
              %   abs sec          (short form)
-----
Total Plan:   1.00           1
Threshold :   0.02

-----
          0.06           1  3135 DELETE DELETE FROM AMT.VAMKTV WHERE LOG_PART=:
          0.02           0  3231 INSERT INSERT INTO AMT.VAMKTA (LOG_PART,AUF_LOG
          0.01           0  3036 SELECT SELECT PARTNERKENNZEICHEN,UNTER_LIEF,A.
          0.01           0  3079 DELETE DELETE FROM AMT.VAMKTA WHERE LOG_PART=:
          0.01           0  2133 DELETE DELETE FROM AMT.VAMAAA WHERE ABW_AUFTR_
          0.01           0  3274 DELETE DELETE FROM AMT.VAMAPB WHERE SNR=:H AND
          0.01           0  3279 UPDATE UPDATE AMT.VAMAPB SET BEDARF_STAT='2' W
***** BOTTOM OF DATA *****
    
```

Panel APCGP203: SQL Statements

The SQL Statements panel shows the plan name, measurement date, system, and the total CPU consumption and the threshold value for the plan statements. Up to ten SQL statements are shown that exceed the threshold value. For each statement, the IMS Feature presents the CPU consumption (in % of the IMS region and in seconds), the action and the first part of the SQL statement.

Using the Panel

Line commands can be used to work with a specific SQL statement displayed in the list.

Type this: **To do this:**

S Show the complete SQL statement. Use of this command is illustrated on the next page.

To view the complete SQL statement, select the statement using line command **S**. A window will open which contains up to 200 more characters of information regarding the selected statement as illustrated below.

```

APCGP203 --- AQM-APC - SQL Statements ----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

Line Commands:  S - Show total SQL Stmt

Plan          : XXI09FM          Date: 2002.02.22          System: IMS

APCDP295 S Q L Statement
SELECT PARTNERKENNZEICHEN, UNTER_LIEF, A. PARTNER_KEZ, A. AUF_LOG_PART, A. ABW_AUFTR
R_NR, DATE (DAT_ERSTELL), K  EZ_VERSANDANW, KEZ_LIEFANZ, DAT_PACK_IST, TERM_VERLAD
E_SOLL, TERM_VERLADE_IST, VERSAND_SOLL, VERSAND_I  ERL_TRANSPM, VERS_PUFF

-----
S          0.06          1  3135 DELETE DELETE FROM AMT.VAMKTV WHERE LOG_PART=:
          0.02          0  3231 INSERT INSERT INTO AMT.VAMKTA (LOG_PART, AUF_LOG
          0.01          0  3036 SELECT SELECT PARTNERKENNZEICHEN, UNTER_LIEF, A.
          0.01          0  3079 DELETE DELETE FROM AMT.VAMKTA WHERE LOG_PART=:
          0.01          0  2133 DELETE DELETE FROM AMT.VAMAAA WHERE ABW_AUFTR_
          0.01          0  3274 DELETE DELETE FROM AMT.VAMAPB WHERE SNR=:H AND
          0.01          0  3279 UPDATE UPDATE AMT.VAMAPB SET BEDARF_STAT='2' W
***** BOTTOM OF DATA *****

```

Panel APCGP203: Panel showing a selected SQL statement

PSB - DLI Information

The PSB panel is displayed when option 4 is chosen on the IMS Feature Menu.

```

APCGP004 --- AQM-APC IMS Feature - PSB ----- Row 1 from 1
COMMAND ==>                                     SCROLL ==> CSR

PSB          : *                               Date: 2002.02.22           System: *
Commands     : SORT P/SY/C%/CA - Psb/SYS/Cpu%-Abs
Line Commands: PO - PSB overview   DS - DLI statements

LC  PSB          System      Total CPU time
      %          abs sec
-----
      XPGMV2M     IMS         0.62         31
***** Bottom of data *****

```

Panel APCGP004: PSB Information

The PSB panel presents an overview of PSB information for all (or specific) systems as of the last measurement day.

Using the Panel

- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.
- Line commands can be used to work with a specific PSB displayed in the list.

Type this: To do this:

PO Display historical information regarding a specific PSB.

DS Display the top 10 DLI statements exceeding the thresholds.

Fields

PSB

To filter the PSBs that are displayed, enter a specific PSB name or a generic PSB name. Generic notation is allowed using "*" as a wild card, e.g., enter "A*" to display the information for all PSBs beginning with "A". By default, all PSBs measured during the last measurement date are displayed.

Date

To select a specific date with which you would like to compare the current information, enter the date. The default date is the last measurement date.

System

The System field contains the name of the system representing the IMS region in which the transactions run. To request that only the information of a certain system be shown, change the name in the System field on the IMS Feature Menu. For details on how the System name is generated and/or user defined, refer to the *AQM-APC Administrator's Guide*.

Columns

PSB name

Name of the PSB.

System

Name of the system representing the IMS region in which this module runs.

Total CPU time %

Percent of CPU utilization of the module within the IMS system. This percentage reflects the total of all CPU time accumulated from all measurements taken during the time range specified on the System Control panel. Refer to the *AQM-APC Administrator's Guide* for more details about this time range.

Total CPU time abs sec

CPU utilization of the module in seconds.

PSB History Information

To display historical information for a specific PSB, select the PSB using line command **PO**.

```

APCGP042 --- AQM-APC - PSB Overview----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

PSB          : XXGMV2M                        Show recent months: 03
Line Commands: DS - DLI statements

LC  Date          System      Total CPU time
      %          abs sec
-----
    2002.02.22    IMS          0.33          16
***** Bottom of data *****

```

Panel APCGP042: PSB Overview

The PSB Overview panel displays a historical overview of the measurement information for a specific PSB.

Using the Panel

- To view more or less information for the PSB, use the Show Recent Months field to define the number of months for which information should be displayed.
- Use line command **DS** to display the top 10 DLI statements exceeding the thresholds.

DLI Statements

DLI statements that exceed the threshold values can be displayed by:

- Selecting a specific PSB using line command **DS** on the PSB panel, or
- Selecting a history record for a PSB using line command **DS** on the PSB Overview panel.

```

APCGP204 --- AQM-APC - DLI Statements ----- Row 1 to 1 of 1
COMMAND ===>                                SCROLL ===> CSR

PSB          : XXGMV2M          Date: 2002.02.22          System: IMS

Call          Total CPU      Total Wait      Resource SSA
              % abs sec      % abs sec
-----
Threshold    : 0.02
-----
GU           1.00      10   0.12      0   IOPCB

```

Panel APCGP204: DLI Statements

The DLI Statement panel displays the PSB name, measurement date, system, and the threshold value for DLI statements. Up to ten DLI statements are shown that exceed the threshold value. Displayed for each statement are the name of the calling transaction, the CPU and Wait Time consumption (in % of the IMS region and in seconds), resource and SSA information.

Overview of InTune Measurement Reports

The OVERVIEW option of the CICS Feature Menu displays different InTune chapters of a measurement report. The default entry is #SJS. However, users can also choose from the following table of InTune chapters.

Chapter ID	Overview Description
#SJS	Sampler and Job Statistics
#RDC	Resource Demand Chart
#COV	Code View
#DSA	Dataset Activity
#TXV	Transaction View
#POV	Pool View

#SJS - Sampler and Job Statistics

To display a chapter in the InTune measurement report (Sampler and Job Statistics is used here for illustration), on the IMS Feature Menu select option 5 and enter the chapter ID (#SJS is the default chapter). The first page of the chapter will be displayed as illustrated on the following panel.

```

APCDP005 InTune(R) Meas. - SAMPLER AND JOB STATISTICS ----- Row 1 to 18 of 20
COMMAND ===>                                     SCROLL ===> CSR

Object   : O O/D/S - Overview/Date/System      Direction: F F/B - Forward/Backward
Overview: #SJS                               Date: 2002.03.26      System/Jobname: IMS      /LBTCT4

-----
Monitor Data Set: XYZ0100.LBTCT5.D2002011.T161255
Final Rate:      1500Msec   Start Date: 2002/03/26   CICS Lvl: 5.2.0
Samples Used:    19995     Start Time: 11:22:58    DB2 Lvl: **N/A**
Sample Balance:  **N/A**   Elapsed: 02:46:40      IMS Lvl: 6.1.0

Job Statistics                                     System Statistics
-----
Jobname:  LBTCT4           TCB Time: 11.35         MVS Lvl: SP6.0.4
Stepname: LBTCT4           SRB Time: 11.76         CPU Type: 0700
Procstep:           Active%: 0.03           CPU Model: 5A
Program:  DFHSIP          Wait%: 99.96           Serial: 20751
ASID: 0142 (322)         Swapped%: 0.00         SMFID: SYSB
User ID: XYZ0100         NonDisp%: 0.00
Job ID:  STC16845        ProcDly%: 0.00
                                <Storage: 4.406M
EXCP-Cnt: 1380           >Storage: 24.96M
SIO-Rate: 0.13          Page-Sec: 0.00

```

Panel APCDP005: Sampler and Job Statistics

The IMS Feature offers a variety of paging alternatives. The normal PF keys for scrolling forward and backwards can be used. Additionally, the Object field and Direction fields can be used in combination to scroll forwards or backwards through different objects.

PF7/ PF8 Backward and forward paging within the actual overview.

Object "O" page through overviews, same date, same IMS system:
Direction: F to page to the next report, B to page to the previous overview.

Object "D": page through date, same overview, same IMS system:
Direction: F to page to the next date, B to page to the previous date.

Order: Date descending, the most recent information is presented first.

Object "S": Page through IMS systems, same overview, same date:
Direction: F to page to the next IMS system, B to page to the previous IMS system.

Order: The system names are presented in AQM-APC internal ID order.

System Information

The System Information panel is displayed when option **6** is chosen on the IMS Feature Menu.

```

APCGP006 --- AQM-APC - System Information ----- Row 1 to 2 of 2
COMMAND ==>                                     SCROLL ==> CSR

                                     Date: 2002.03.26
Commands      : SORT SY/J - SYstem/Jobname
Line Commands: O - Measurement Overview  B - Browse Measurement  P - Print
               PE - Edit      SO - System Overview

LC System   Jobname   Time   Consuming Time   EXCPS   Measurement
            Elps CPU  Wait
-----
IMS        LBTIMST4  11.22  166    0  165      1          19
IMS        LBTIMST5  11.26  166    0  165      1          19
***** Bottom of data *****

```

Panel APCGP006: System Information

The System Information panel presents all InTune IMS measurements processed by job APCYJNAR according to the System Control parameters. For every processed IMS measurement, the related system is listed. If defined also under System Control, the measurement can relate to two systems. For more details, refer to the *AQM-APC Administrator's Guide*.

Use this panel to access or print a system's corresponding performance measurement report. Additionally, the measurement report can be edited. Editing might be desirable to add comments, delete lines or sections not to be printed, or temporarily change the JCL print statements.

Using the Panel

- To choose a specific date for which you would like to display information, in the Date field, change the date. The default date is the last measurement date.
- Primary command SORT can be used to change the order in which the information is listed. If you need details regarding how to do this, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific system displayed in the list.

Type this: **To do this:**

O	Display an overview of the InTune measurement reports.
B	Browse the InTune measurement report.
P	Print the InTune measurement report.
PE	Edit the InTune measurement report.
SO	Display the System Overview panel with all information for a specific IMS system for a specific time period.

Columns

System

System name (either default or user defined) from the System Control panel.

Jobname

Job name of the IMS startup job.

Time

Start time of the InTune measurement.

Consuming Time in Minutes - Elps

Elapsed time of measurement.

Consuming Time in Minutes - CPU

Total CPU time consumed during measurement.

Consuming Time in Minutes - Wait

Total wait time consumed during measurement.

EXCPs

Total EXCPs -- in thousands -- performed during measurement.

Measurement Samples

Total samples processed by InTune during measurement.

System Overview

The System Overview panel is displayed when a IMS system is selected on the System Information panel using line command **SO**.

```

APCGP062 --- AQM-APC - System Overview ----- Row 1 to 14 of 27
COMMAND ===>                                SCROLL ===> CSR

System      : IMS                               Show recent months: 03
Line Commands: O - Measurement Overview      B - Browse Measurement  P - Print
              PE - Edit

LC Date      Jobname    Time    Consuming Time    EXCPS  Measurement
              Elps CPU  Wait     Elps CPU  Wait     Samples
-----
2002.03.26  LBTIMST4  11.22  166    0  165        1        19
2002.03.26  LBTIMST5  11.26  166    0  165        1        19
2002.03.15  GENIMS05   9.01  360   210  301        4        10
2002.03.15  GENIMS06   9.01  360   208  316        0        10
2002.03.15  GENIMS07   9.01  360   210  297        0        10
2002.03.15  GENIMS14   9.01  360   210  297        0        10
2002.03.14  GENIMS05   9.01  360    10  301        4        10
2002.03.14  GENIMS06   9.01  360    8  316        0        10
2002.03.14  GENIMS07   9.01  360    10  297        0        10
2002.03.14  GENIMS14   9.01  360    10  297        0        10
2002.02.26  LBTIMST4  11.22  166    0  165        1        19
2002.02.26  LBTIMST5  11.26  166    0  165        1        19
2002.02.26  X99IMS1   11.26   16    0   15        1         4
2002.02.26  X99IMS2   11.26   16    2   15        1         4

```

Panel APCGP062: System Overview

The System Overview panel displays all date specific information for a specific IMS system. The Show Recent Months field can be used to limit the information to the current month (Show Recent Months = 1) or to display all information available up to 18 months (Show Recent Months = 18). The default value for Show Recent Months is 3.

Line commands and columns are the same as those described for the System Information panel.

Alert Management

In IMS, there are hundreds of transactions but not all of these transactions need performance monitoring. Many transactions, even though they may be high consumers, only execute occasionally and do not warrant concern.

For each execution of the IMS Feature, important top consuming transactions can be automatically identified and alerted. This works in two steps:

1. The top number of consuming transactions are identified based on the scope defined as a parameter, e.g., TOP Limit = 10. This parameter is maintained by your administrator.
2. Within this TOP Limit, the current execution consumption values of the transactions are compared to the statistical information maintained for the same transactions on the AQM-APC database. If the actual consumption exceeds the statistical limits, an alert is automatically issued -- referred to as a statistical alert.

Additionally, the AQM-APC user (APM Team) can manually issue alerts explicitly for transactions using the online Alert Management option -- referred to as user alerts.

The Alert Management option provides all the information necessary for the APM Team to handle the alert. Information is provided in the form of state and reason codes that identify the situation.

How the TOP Limit Works

In order to use the Alert Management option of the IMS Feature, the TOP Limit of work must be defined. TOP Limit processing works for each defined IMS system in AQM-APC. It is the last step in the total system handling. The TOP Limit is maintained by the AQM-APC administrator. It can contain a value from 0 to 999. A value of 0 deactivates the TOP Limit, thus deactivating Alert Management. Otherwise, the TOP Limit number defines how many important transactions are to be statistically observed.

Within the TOP Limit -- meaning the number defined as a parameter -- all transactions of the current system will be statistically observed and, at the end, a runaway test check is performed. The statistical limits are based on up to eighteen months of stored interpreted profiles. To determine the TOP consumer and issue alerts, one of two conditions normally exists:

- Transaction consumption is static. A standard deviation check is done and if the result indicates an increase in the consumption (runaway), an alert is issued.
- Transaction consumption is not static. A standard deviation check is done and if the result indicates a drastic increase in the consumption (runaway), an alert is issued.

If there is a runaway situation, the transaction will be added to the Alert file with the state OPEN and the reason STAT. Alerts can be viewed under the Alert Management dialog.

Note: The range of the statistical observation is limited to one year. For a transaction to be alerted, it must have been observed in at least three separate *STROBE* profiles collected during the period of statistical observation.

Alert List Information TRX

The Alert List panel is displayed when option 7 is chosen on the IMS Feature Menu or when line command **AL** is used on the Transaction Information panel.

```

APCDP007 --- AQM-APC IMS Feature - Alert List - All Issued ---- ROW 1 from 15
COMMAND ===>                                     SCROLL ===> CSR

Transaction : *                               State: *
Commands    : SORT T/SY/S/A/D - Tran/System/State/Aid/Date
              : REV -list review OPEN -open ALL -issued RECENT -most recent
Line Commands: TO -Tran Ov.  S -Show  R -Review  C -Close  D -Delete  I -Insert

```

LC	Traname	System	State	Reason	AID	Issue Date	No.Al.
	VSIB	IMS0002	REV	STAT	15353	2002.08.02	1
	VSCO	IMS0002	OPEN	STAT	15352	2002.08.02	1
	VNAF	IMS0002	OPEN	STAT	15350	2002.08.02	1
	UWGC	IMS0002	OPEN	STAT	15349	2002.08.02	1
	SH21	IMS0002	OPEN	STAT	15348	2002.08.02	1
	PN\$1	IMS0002	OPEN	STAT	15347	2002.08.02	1
	IUAQ	IMS0002	OPEN	STAT	15345	2002.08.02	1
	P140	IMS0001	OPEN	STAT	15342	2002.08.02	1
	LZ27	IMS0001	OPEN	STAT	15340	2002.08.02	1
	LZ15	IMS0001	OPEN	STAT	15339	2002.08.02	1
	LZ14	IMS0001	OPEN	STAT	15338	2002.08.02	1
	LZ11	IMS0001	OPEN	STAT	15337	2002.08.02	1
	LZ09	IMS0001	OPEN	STAT	15336	2002.08.02	1

Panel APCDP007: Alert List -- All Issued

If a TOP Limit has been identified, any transaction within the TOP Limit that is found to exceed its statistical limits will automatically be alerted. Refer to the *AQM-APC Administrator's Guide*.

Use the Alert List panel to see an overview of all alerts along with all state codes and reason codes. The state code identifies the current state of the alert, e.g., whether the alert is open, reviewed, or closed. The reason code identifies why the alert was issued, i.e., statistical limits were exceeded or user alerted.

Using the Panel

- To filter the data listed on the panel, use the Transaction and/or State fields as described below in the Fields section.
- Primary commands can be used as follows:

Type this: **To do this:**

REV View alerts with STATE = REV.

OPEN View alerts with STATE = OPEN.

ALL View all alerts.

RECENT View the most recent occurrence of each alert.

SORT If you need details regarding how to use SORT commands, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific alerted transaction displayed in the list.

Type this: To do this:

TO	Display the Transaction Overview panel.
S	Show the Alert.
R	Review and edit the Alert text. The state is changed to REV.
C	Close an Alert. The state is changed to CUSE and can no longer be reviewed.
D	Delete an Alert.
I	Insert a new Alert.

Input Fields

Transaction

To control the list of alerts being displayed, enter an actual transaction name or a generic transaction name. Generic character asterisk "*" can be used to list all alerts for all transactions or to limit the list of alerts to a generic group of transactions.

State

To reduce the list of alerts to a specific state, enter the state of the alerts to be displayed. You can enter a valid state code, the first letter of the state code plus an asterisk, or an asterisk alone to see all states of alert.

The following state codes are possible:

Table 16: Alert State Codes

State Code	Short Desc.	Long Description
OPEN	Open	An open state indicates a new alert has been opened automatically by AQM-APC or by a user.
REV	Review	A review state code stops further measurements for the transaction. An open alert can be changed to REV by selecting the alert using line command R . This allows you to review the alert and changes the alert to state code REV.
CLOSE	Closed	A closed state code indicates the completion of an alert process.

Columns

Traname/System

The specific transaction and system for which the alert is issued.

State

The current state of the alert. See the table on the preceding page for a detailed description of the valid state codes.

Reason

The current reason for the alert. The following reason codes are valid:

Table 17: Alert Reason Codes

Reason Code	Short Desc.	Long Description
USER	User	The alert was issued by an AQM-APC user. See alert text for explanation.
STAT	Statistics	The alert was automatically issued by AQM-APC because the transaction exceeded its normal statistical limits.

AID

A unique alert identification is given to each alert.

Issue Date

The date the alert was issued.

No. Al.

The number of alerts for this transaction. If more than one alert exists and you want to delete the alert for this transaction, each alert must be individually deleted using line command **D**.

Show, Review, or Insert an Alert

The following panel is displayed as a result of one of these actions:

- A transaction was selected on the Alert List panel using line command **S** or **R**.
- To insert a user Alert for a specific transaction, line command **I** was used on the Alert List panel or line command **AI** was used on the Transaction Information panel.

```

APCDP701  AP04506.APCX.TEMP1 ----- Columns 001 072
COMMAND ==>
SAVE = END command or PF3          CANCEL = CAN command
Transaction System Alerts State AID
VSIB          IMS0002          1  OPEN  15353
-----
***** ***** Top of Data *****
000001 2002-08-02 APC ALERT ID 15353 BY STAT
000002
000003          TRANSACTION : VSIB          SYSTEM : 0002  PGM : IMS1IMS2
000004          CPU% MEAS : 2.00  AVERAGE : .95  STD.DEV : .27
000005          -----
***** ***** Bottom of Data *****

```

Panel APCDP701: Show/Review/Insert Alert Panel

When selected with **S** or **R** this panel details the alert situation for the specific transaction by displaying all text information that is either created automatically by AQM-APC or documented by the user.

The alert is identified by the transaction name. Additionally, the number of alerts, status code, reason codes, identifier, and creation date are listed.

Using the Panel

- In Review mode (line command **R**), you are allowed to edit text up to the maximum of 102 lines. The alert state is changed to REV when it is reviewed using line command R.
- In Insert mode (line command **I** or **AI**), you are allowed to insert a user alert and can create up to 102 lines of alert text. The alert state will be OPEN with reason code USER.
- In both Review and Insert modes, the text is saved in the AQM-APC database and is available anytime for displaying or for documenting further information. The text is erased if you use the delete command for the alert on the Alert List panel.
- To cancel any changes, enter the CAN (cancel) command. Changes in the text will be ignored and the state of the alert will not be changed.

Alert List Information changed Modules

The Alert List panel is displayed when option **8** is chosen on the IMS Feature Menu or when line command **AL** is used on the Transaction Information panel.

```
APCDP008 ----- AQM-APC IMS Feature - Alert List Changed modules - Row 1 from 15
COMMAND ==>>>                                     SCROLL ==>> HALF
```

```
Module      : *                               State: *
Commands    : SORT M/SY/S/A/D/L/U - Module/System/State/Aid/Date/Linkdate/Uid
              : REV -list review OPEN -open ALL -issued RECENT -most recent
Line Commands: MO -Mod.Ov.  S -Show R -Review C -Close D -Delete I -Insert
```

LC	Module	System	State	Reason	AID	Issue Date	Link Date	By (UID)
	ASMTDLI	*ONLINE*	PEND	MODC	1	2002.04.26	2002.04.12	*AQMAPC*
	ASMTDLI1	*ONLINE*	PEND	MODC	2	2002.04.26	2002.04.12	*AQMAPC*
	ASMTDLI2	*ONLINE*	PEND	MODC	3	2002.04.26	2002.04.12	*AQMAPC*
	ASMTDLI3	*ONLINE*	PEND	MODC	4	2002.04.26	2002.04.12	*AQMAPC*
	ASMTDLI4	*ONLINE*	PEND	MODC	5	2002.04.26	2002.04.12	*AQMAPC*
	CBLTDLI	*ONLINE*	PEND	MODC	6	2002.04.26	2002.04.12	*AQMAPC*
	CBLTDLI1	*ONLINE*	PEND	MODC	7	2002.05.10	2002.04.12	*AQMAPC*
	CBLTDLI2	*ONLINE*	PEND	MODC	8	2002.05.10	2002.05.09	*AQMAPC*
	CBLTDLI3	*ONLINE*	PEND	MODC	9	2002.04.26	2002.04.12	*AQMAPC*
	CBLTDLI4	*ONLINE*	PEND	MODC	10	2002.04.26	2002.04.12	*AQMAPC*

Panel APCDP008: Alert List Changed modules

The function works similar to the Batch Changed Module processing. The scanprocess activated by Job APCXJLIB, Step APCXALMO, was enhanced to detect if the module is a CICS-, IMS- or Batch-module. For changed CICS-modules now a PENDING alert will be created. Different to Batch the alerts are shown based on the module name with the global entry *ONLINE* for the CICS-Systemname. The alert entries will be considered in the next CICS measurement result processing. The state of a PENDING alert belonging to a module which was active during the measurement will be changed to OPEN or to CTHR (Closed bei THResholds). More to CTHR under **DEFINING THRESHOLDS in the Administrator's Guide**. Was the module called in different systems the alert entry is duplicated for each system the module was active during the measurement.

Use the Alert List panel to see an overview of all alerts along with all state codes and reason codes. The state code identifies the current state of the alert, e.g., whether the alert is open, reviewed, or closed. The reason code identifies why the alert was issued, i.e., statistical limits were exceeded or user alerted.

Using the Panel

- To filter the data listed on the panel, use the Transaction and/or State fields as described below in the Fields section.
- Primary commands can be used as follows:

Type this: **To do this:**

REV View alerts with STATE = REV.

OPEN View alerts with STATE = OPEN.

- ALL** View all alerts.
- RECENT** View the most recent occurrence of each alert.
- SORT** If you need details regarding how to use SORT commands, see "Sorting List Panels" on page 3.

- Line commands can be used to work with a specific alerted transaction displayed in the list.

Type this: To do this:

- TO** Display the Transaction Overview panel.
- S** Show the Alert.
- R** Review and edit the Alert text. The state is changed to REV.
- C** Close an Alert. The state is changed to CUSE and can no longer be reviewed.
- D** Delete an Alert.
- I** Insert a new Alert.

Input Fields

Transaction

To control the list of alerts being displayed, enter an actual transaction name or a generic transaction name. Generic character asterisk '*' can be used to list all alerts for all transactions or to limit the list of alerts to a generic group of transactions.

State

To reduce the list of alerts to a specific state, enter the state of the alerts to be displayed. You can enter a valid state code, the first letter of the state code plus an asterisk, or an asterisk alone to see all states of alert.

The following state codes are possible:

Table 18: Alert State Codes

State Code	Short Desc.	Long Description
OPEN	Open	An open state indicates a new alert has been opened automatically by AQM-APC or by a user.
REV	Review	A review state code stops further measurements for the transaction. An open alert can be changed to REV by selecting the alert using line command R . This allows you to review the alert and changes the alert to state code REV.
CLOSE	Closed	A closed state code indicates the completion of an alert process.

Columns

Traname/System

The specific transaction and system for which the alert is issued.

State

The current state of the alert. See the table on the preceding page for a detailed description of the valid state codes.

Reason

The current reason for the alert. The following reason codes are valid:

Table 19: Alert Reason Codes

Reason Code	Short Desc.	Long Description
USER	User	The alert was issued by an AQM-APC user. See alert text for explanation.
STAT	Statistics	The alert was automatically issued by AQM-APC because the transaction exceeded its normal statistical limits.

AID

A unique alert identification is given to each alert.

Issue Date

The date the alert was issued.

No. Al.

The number of alerts for this transaction. If more than one alert exists and you want to delete the alert for this transaction, each alert must be individually deleted using line command **D**.

Show, Review, or Insert an Alert

The following panel is displayed as a result of one of these actions:

- A transaction was selected on the Alert List panel using line command **S** or **R**.
- To insert a user Alert for a specific transaction, line command **I** was used on the Alert List panel or line command **AI** was used on the Transaction Information panel.

```

COMMAND ==>>
SAVE = END command or PF3          CANCEL = CAN command
Module      System      Alerts   State   AID
CBLTDLI2    IMS0003      1      OPEN   8
-----
***** Top of Data *****
2002-05-10 APC ALERT ID 00008      BY MODC      LINK: 2002-05-09
-----
MODULE : CBLTDLI2 SYSTEM: *ONLINE*
-----
2002-05-12 APC ALERT ID 00008      BY MEAS      MEAS-DATE: 2002-11-05
-----
MODULE: CBLTDLI2  SYSTEM: IMS0003  -CALLED BY    5 TRX-
MODULE-COUNTS:   2345  CPU %:   1.63  LOADED: ABOVE 16MB
-----
THRES.-COUNTS:    0  -CPU %:   0.00  REACHED >OPEN<
-----
***** Bottom of Data *****

```

Panel APCDP801: Show/Review/Insert Alert Panel

When selected with **S** or **R** this panel details the alert situation for the specific transaction by displaying all text information that is either created automatically by AQM-APC or documented by the user.

The alert is identified by the transaction name. Additionally, the number of alerts, status code, reason codes, identifier, and creation date are listed.

Using the Panel

- In Review mode (line command **R**), you are allowed to edit text up to the maximum of 102 lines. The alert state is changed to REV when it is reviewed using line command **R**.
- In Insert mode (line command **I** or **AI**), you are allowed to insert a user alert and can create up to 102 lines of alert text. The alert state will be OPEN with reason code USER.
- In both Review and Insert modes, the text is saved in the AQM-APC database and is available anytime for displaying or for documenting further information. The text is erased if you use the delete command for the alert on the Alert List panel.
- To cancel any changes, enter the CAN (cancel) command. Changes in the text will be ignored and the state of the alert will not be changed.

Exporting IMS Feature Data - Job APCIJEXP

With job APCIJEXP, data that is stored within the IMS Feature can be exported for use in other systems, e.g., EXCEL, SAS. The data is exported from the AQM-APC database to a sequential file that can be used in other systems or downloaded to the PC, e.g., via file transfer.

```
//jobname...
/*=====
/* JOB TO EXTRACT INFORMATION FROM IMS POOL *
/*          COPYRIGHT APM AG ZURICH *
/*=====
//APCDATAB EXEC PGM=APCDATAB
//STEPLIB DD DSN=prefix.AQMAPC.LOAD,
//          DISP=SHR
//APCCPRO1 DD DSN=NULLFILE,
//          DISP=SHR
//APCIPRO1 DD DSN=prefix.AQMAPC.KSDSIMS,
//          DISP=SHR
//APCIN DD DSN=prefix.AQMAPC.CNTL(APCICEXP),
//          DISP=SHR
//APCTAB DD SYSOUT=*
```

JCL for Job APCIJEXP

The scope of the data to be exported is defined within the job by using input parameters in member APCICEXP of the product CNTL library. The information to be exported is specific to transactions, modules, plans, and PSBs. See Table 20 on the next page. To assist you in using this information once it has reached its destination, the following record layout illustrations are provided. Each field of the record is separated by a semicolon delimiter.

Transaction Record

```
DATE;SYSID;TYPE;TXNAME;CPU %;CPU ABS SEC;CPU ABS/TX;CALLS;SERV.TIME;
YYYY.DD.MM;NNN;T;XXXXXXXX;NN.NN;NNNNN;NNN.NN;NNNNNNN;NN.NN;
```

Module Record

```
DATE;SYSID;TYPE;MODULNAME;CPU %;CPU ABS SEC;CPU ABS/CALL;CALLS;
YYYY.DD.MM;NNN;M;XXXXXXXX;NN.NN;NNNNN;NNN.NN;NNNNNNN;
```

PLAN Record

```
DATE;SYSID;TYPE;PLANNAME;CPU %;CPU ABS SEC;
YYYY.DD.MM;NNN;D;XXXXXXXX;NN.NN;NNNNN;
```

PSB Record

```
DATE;SYSID;TYPE;MODULNAME;CPU %;CPU ABS SEC;;;WAIT %;TXNAME;PSB;
YYYY.DD.MM;NNN;P;XXXXXXXX;NN.NN;NNNNN; ; ;00.00;XXXXXXXX;XXXXXXXX;
```

Figure 17: Record Layout for Export File

The following table explains each of the valid APCICEXP parameters:

Table 20: Parameters for APCICEXP Member

APCICEXP Parameters	Opt./Req.	Meaning
DATE FROM YYYYMMDD=	Required	The beginning date from which all data will be exported.
DATE TO YYYYMMDD=	Optional	All data through this date will be exported. Default: Until Last Entry
SUBSYSTEM=	Optional	The subsystem. IMS is requested. Default: CICS
SUBID=	Optional	The internal system ID. Default: All subsystem IDs
SYSNAME=	Optional	The name of the system defined in AQM-APC (see "System Control"). Either SUBID <u>or</u> SYSNAME can be used.
INFOTYPE=	Optional	The type of data to be exported: T - Transaction records M - Program records D - DB2 plan data P - PSB records (DLI) Default: All types of data

```
DATE FROM YYYYMMDD=20020101
DATE TO YYYYMMDD=20021001
SUBSYSTEM=IMS
```

Figure 18: Example of Input to APCICEXP Member

Index

- #
- #SJS - Sampler and Job Statistics 97, 135
- 1**
- 16 MB Line - LS column
 - General Module Information 84, 122
- A**
- AID
 - Alert list 23, 104, 108, 142, 146
 - Alert overview 25
- Alert
 - CICS Feature 102, 140
- alert history
 - Central Component 28
- Alert List panel
 - Central Component 21
 - CICS Feature 102, 106, 140, 144
- alert management
 - Central Component 18
 - CICS Feature 101
 - IMS Feature 139
- Alert Overview Panel
 - Central Component 24
- alert reason codes
 - Central Component 18
 - CICS Feature 104, 108, 142, 146
- Alert State
 - Checkpoint Checker List 70
- alert state codes
 - Central Component 18
 - CICS Feature 103, 107, 141, 145
- Alert State column 81, 119
- alert TEXT only
 - New User Alert 29
- Alert Text panel
 - CICS Feature 105, 109, 143, 147
- alerts
 - exporting from Central Component 57
 - history of in Central Component 28
 - reviewing Central Component 26
 - reviewing or inserting CICS Feature 105, 109, 143, 147
- APCBCCRI member 61
- APCBCDAX member 59
- APCBCJEX member 56
- APCBJCRI job 61
- APCBJDAX job 59
- APCBJEXP job 55
- APCBP000 7
- APCBP001 10
- APCBP002 21
- APCBP003 31
- APCBP005 39
- APCBP011 12
- APCBP021 24
- APCBP022 28
- APCBP031 33
- APCBP051 41
- APCBP101 14
- APCBP201 26
- APCBP301 36
- APCBP302 35
- APCBP303 35
- APCBP501 42, 44, 46, 47
- APCBP502 49
- APCBP503 51
- APCBP504 53
- APCBPIAL1 29
- APCBPMSS 54
- APCBRXX procedure 2
- APCCCEXP member 110
- APCCCEXP parameters 111
- APCCJEXP job 110
- APCDP000 115
- APCDP005 - #SJS 97, 135
- APCDP007 102, 106, 140, 144
- APCDP201 86, 124
- APCDP701 105, 109, 143, 147
- APCGP000 77
- APCGP001 80, 118
- APCGP002 83, 121
- APCGP003 87, 125
- APCGP004 92, 130
- APCGP006 98, 136
- APCGP011 82, 120
- APCGP022 85, 123
- APCGP032 89, 127
- APCGP042 94, 132
- APCGP062 100, 138
- APCGP203 90, 91, 128, 129
- APCGP204 95, 133
- APCICEXP member 148

APCIJEXP job 148
 APCJP111 17
 APCKCCPT 71
 APCKJCPT job 71
 APCKP001 67
 APCKP002 69
 APCSIMG 3
 APCXCAEX member 58
 APCXJEXP job 57
 APCXJLIB job 84, 122
 APCXP000 4
 APCXPP01 9, 79, 117
 APCYJNAR job
 System Information 98, 136
 application programs
 data mining 42
 Average Elpsed
 Checkpoint Checker List 70
 Job list 34
 Average Srvu
 Checkpoint Checker List 70
 Job list 34
 Average values Elpsd
 Job Overview 37
 Average values Srvu
 Job Overview 37

B

BINDDATE field
 SQL Statements panel 90, 128
 Bulk Alert Text 35
 bulk user alerts 35

C

Calculated Stret
 Measurement list 11
 Calculated Wait
 Measurement list 11
 CANCEL command 2
 Central Component
 exporting data from 55
 how to use 5
 Central Component Menu 7
 changed module 23
 Chapter
 InTune reports 15
 Checkpoint Checker 63
 Checkpoint Checker List 69
 Checkpoint Freq 70
 Checkpoint No. 70
 Checkpoint Query Facility 67
 Checkpoint query results
 displaying 69

AQM-APC for InTune User's Guide

CICS Feature
 exporting data from 110
 how to use 75
 CICS regions
 viewing online measurement data 77, 115
 CICS startup job
 jobname 99
 CICS system information 100
 CIMP alert
 Central Component 19
 CLOSE state code
 CICS Feature 103, 107, 141, 145
 CMUL alert
 Central Component 19
 Collection, Package/Plan
 DB2 Plan Overview 17
 commands
 CANCEL 2
 END 2
 INSERT 2
 line 2
 primary 2
 SORT 2
 SORT STD 2
 Cond
 Job Overview 37
 Condition code exceptions
 Job Overview 37
 Consuming Time column
 System Overview panel 99, 137
 COVT alert
 Central Component 19
 CPU
 Job Overview 37
 Measurement list 11
 Measurement overview 13
 CPU consumers
 top 5 statements 54
 CPU time %
 DB2 Plan Overview 17
 CPU time consumed 99, 137
 CPU time secfield
 Plan panel 88, 126
 CPU utilization
 CICS Feature 86
 DLI statements 95, 133
 in seconds 81, 119
 of module statements
 CICS Feature 86
 IMS Feature 124
 of modules 122
 of PSB modules 93, 131
 of the plan 88, 126
 of transactions 122

- percentage 81, 119
- SQL Statements panel 90, 128
- critical path
 - measuring jobs 61
- cross reference job steps
 - data mining 51
- cross reference list
 - displaying 12
- cross reference subsystem
 - data mining 53
- CTHR alert
 - Central Component 19
- CUSE alert
 - Central Component 18

D

- data mining
 - filter criteria 39
- Data Mining
 - exporting data 59
- Data Mining Application Programs 42
- Data Mining DB2 Plans 47
- Data Mining Job Steps 49
- Data Mining Menu 41
- data mining scope 39
- Data Mining Selection 39
- Data Mining Subsystems 46
- Data Mining System Programs 44
- Data Mining XREF Jobstep 51
- Data Mining XREF Subsystem 53
- Date
 - Measurement list 11
 - Measurement overview 13
- DATE field
 - PSB panel 92, 130
 - SQL Statements panel 90, 128
- Date field
 - Plan panel 88, 126
- DATE field
 - General Module Information 84, 122
 - Transaction Information 81, 119
- Date/Time
 - Job Overview 37
- DB2 Plan
 - viewing and explaining 17
- DB2 Plan Overview Panel 17
- DB2 Plans
 - data mining 47
- DIRECTION field
 - InTune reports 97, 135
- DLI information
 - CICS Feature 92
 - IMS Feature 130

- DLI statements
 - CICS Feature 95
 - IMS Feature 133
- documentation online xiv

E

- editing the measurement
 - Measurement overview 12
- Elapsed time
 - of measurement 99, 137
- ELPS reason
 - Central Component 18
- ELPS/SRVU reason code
 - Central Component 23
- Elpsd
 - Job Overview 37
- Elpsed
 - Measurement list 11
 - Measurement overview 13
- END command 2
- examples
 - APCCCEXP member 111
 - APCICEXP member 149
- EXCPs
 - Job Overview 37
 - Measurement list 11
 - Measurement overview 13
- EXCPs column
 - System Overview panel 99, 137
- exporting
 - job APCKJCPT 71
- exporting alerts
 - Central Component 57
- exporting APC data
 - Central Component 55
- exporting Central Component data
 - job APCCJEXP 55
- exporting Checkpoint data 71
- exporting CICS Feature data
 - job APCCJEXP 110
- exporting Data Mining
 - Central Component 59
- exporting IMS Feature data
 - job APCIJEXP 148

F

- flowcharts
 - how System Control works 75
- From Date
 - Measurement list 11

G

General Module Information
 CICS Feature 83
 IMS Feature 121
 General Module Overview 85, 123
 generic notation
 introduced 3
 Give Alert 33, 69
 Global Print JCL 9
 Global Print JCL panel 79, 117

H

history of modules
 CICS Feature 85
 IMS Feature 123
 history of transactions
 CICS Feature 82

I

ID of alert 23, 104, 108, 142, 146
 image name 3
 Impo field
 Checkpoint Checker List 70
 Job list 34
 IMS Feature
 accessing 115
 exporting data 148
 IMS startup job
 jobname 137
 IMS system information 138
 IMS transactions
 identifying top consumers 139
 INSERT command 2
 internet address xiv
 InTune measurement request
 New User Alert 29
 InTune Chapters 16
 InTune performance measurement List
 displaying 10
 InTune reports
 displaying for CICS Feature 96, 134
 Issue Date
 Alert list 23, 104, 108, 142, 146
 Alert overview 25

J

JCL
 defining job card for printing 9
 to print 79, 117
 job APCYJNAR
 System Information 98, 136

AQM-APC for InTune User's Guide

job information
 exporting 55
 Job List Panel 33
 Job Overview 36
 job query facility 31
 Job Query Facility Panel 31
 job query results
 displaying 33
 job selection 31
 job steps
 data mining 49
 XREF data mining 51
 Jobname
 Alert list 22
 Measurement list 11
 Jobname column
 System Overview panel 99, 137
 jobs
 APCBJCRI 61
 APCBJDAX 59
 APCBJEXP 55
 APCCJEXP 110
 APCIJEXP 148
 APCKJCPT 71
 APCXJEXP 57
 APCXJLIB 84, 122

L

line command X 2
 line commands
 using 2
 Link Date
 Alert overview 25
 linkage date
 of module 84, 122
 Linkdate column
 General Module Information 84, 122

M

MB line 84, 122
 Meas
 Measurement overview 13
 Meas.
 Measurement list 11
 Measurement List Panel 10
 Measurement Overview Panel 12
 Measurement Samples
 System Overview panel 99, 137
 Measurement Session Data 14
 members
 APCBCCRI 61
 APCBCDAX 59
 APCBCJEX 56

APCKCCPT 71
 APCXCAEX 58
 job APCCCEXP 110
 job APCICEXP 148
 Menu of CICS Feature
 using 77
 Menu of IMS Feature
 using 115
 MODC reason
 Central Component 18
 MODC reason code
 Central Component 23
 Module
 Alert overview 25
 module changed 23
 Module History
 CICS Feature 85
 IMS Feature 123
 module information
 CICS Feature 83
 IMS Feature 121
 Module name
 General Module Information 84, 122
 Module name field
 General Module Information 83, 121
 module statements
 exceeding thresholds 84, 122
 IMS Feature 124
 Module Statements column
 General Module Information 84, 122
 module statements in CPU time order
 CICS Feature 86
 Module Statements panel
 CICS Feature 86
 IMS Feature 124
 modules
 linkage date 84, 122
 running above/below 16 MB line 84, 122
 viewing history 85
 viewing IMS Feature history 123
 most important transactions
 CICS Feature 101
 IMS Feature 139

N

New User Alert Window
 Central Component 29
 No.
 Alert overview 25
 No. Al.
 Alert list 23, 104, 108, 142, 146
 No. of Job Steps 43

O

OBJECT field
 InTune reports 97, 135
 online documentation xiv
 OPEN alert
 Central Component 18
 OPEN state code
 CICS Feature 103, 107, 141, 145
 OPTION field
 CICS Feature Menu 77, 115

P

paging alternatives
 InTune reports 97, 135
 panel hierarchy
 CICS Feature 76
 IMS Feature 114
 panels
 changing sort order 3
 pattern matching 3
 PEND alert
 Central Component 18
 Plan field
 Plan panel 87, 125
 SQL Statements panel 90, 128
 Plan History Information
 CICS Feature 89
 IMS Feature 127
 Plan name column
 Plan panel 88, 126
 Plan Overview 127
 Plan panel
 CICS Feature 87
 IMS Feature 125
 Preproduction Feature
 setting base measurement 29
 primary commands
 CANCEL 2
 END 2
 INSERT 2
 SORT 2
 SORT STD 2
 using 2
 print JCL job card 9
 Print JCL panel 79, 117
 PSB field
 PSB panel 92, 130
 PSB History Information
 CICS Feature 94
 IMS Feature 132
 PSB panel
 CICS Feature 92
 IMS Feature 130

Q

query criteria
 defining 31
 query facility 31
 query results
 displaying 33

R

Reason
 Alert list 23, 104, 108, 142, 146
 Alert overview 25
 reason codes
 Central Component 18
 CICS Feature 104, 108, 142, 146
 Reason codes 23
 Recently Occurred
 Checkpoint Checker List 70
 Job list 34
 REV alert
 Central Component 18
 REV state code
 CICS Feature 103, 107, 141, 145
 Review Alert panel
 CICS Feature 105, 109, 143, 147
 REXX procedure APC42 3
 runaways
 CICS Feature 101
 IMS Feature 139

S

Sampler and Job Statistics 97, 135
 scope of work
 CICS Feature 101
 IMS Feature 139
 scrolling
 InTune reports 97, 135
 Select Jobsteps From field 32
 Show Recent Months field
 System Overview panel 100, 138
 Show/Review Alert 26, 105, 109, 143, 147
 Significant Statements window 54
 SORT command 2
 SORT commands
 how to use them 3
 sort order
 changing 2
 SORT STD command 2
 sorting list panels 3
 SQL statements
 CICS Feature 90
 IMS Feature 128
 Srvu

Job Overview 37
 SRVU
 Measurement overview 13
 SRVU reason
 Central Component 18
 SSA information
 DLI statements 95, 133
 STAT reason code
 CICS Feature 104, 108, 142, 146
 State
 Alert list 104, 108, 142, 146
 Alert overview 25
 state codes
 Central Component 18
 CICS Feature 103, 107, 141, 145
 State codes
 Alert list 22, 103, 107, 141, 145
 statements
 top CPU consumers 54
 statistical alert 104, 108, 142, 146
 CICS Feature 101
 IMS Feature 139
 Statistical Alerts
 Job Overview 36
 statistical limits
 CICS Feature 101, 102, 140
 IMS Feature 139
 statistical values
 displaying 36
 Stret
 Measurement list 11
 Measurement overview 13
 subsystem
 XREF data mining 53
 subsystems
 data mining 46
 System
 General Module Information 84, 122
 Job Overview 37
 System column
 System Overview panel 99, 137
 System Control
 CICS Feature 75
 IMS Feature 113
 System field
 General Module Information panel 84, 122
 Plan Information panel 88, 126
 PSB panel 93, 131
 Transaction Information panel 81, 119
 system image name 3
 System Information panel
 CICS Feature 98
 IMS Feature 136
 System Overview panel

CICS Feature 100
 IMS Feature 138
 system programs
 data mining 44

T

TEXT only alert
 New User Alert 29
 TEXT reason
 Central Component 18
 TEXT reason code
 Central Component 23
 thresholds
 module statements exceeding 84, 122
 Time
 Measurement overview 13
 Time column
 System Overview panel 99, 137
 top consuming job steps
 Central Component 19
 TOP Limit
 CICS Feature 101
 CICS Feature Alert List panel 102, 140
 IMS Feature 139
 TOP Scope
 job query facility 31
 New User Alert 29
 TOP Scope described
 Central Component 19
 Total Alert Text Panel 28
 Total CPU time % column
 General Module Information 122
 PSB panel 93, 131
 Transaction Information 119
 TOTAL CPU TIME % column
 Transaction Information 81
 Total CPU time % field
 Plan panel 88, 126
 Total CPU time abs sec
 Plan panel 88, 126
 TOTAL CPU TIME ABS. column
 Transaction Information 81, 119
 Total CPU time abs. sec column
 General Module Information 122
 Total CPU time column
 PSB panel 93, 131
 Total Delay time % column
 Transaction Information 119
 Total Delay Time % column
 Module Information 84
 TOTAL DELAY TIME % column
 Transaction Information 81
 Total Delay time abs sec column

Transaction Information 119
 Total Delay Time abs sec. column
 Module Information 84
 TOTAL DELAY TIME ABS. column
 Transaction Information 81
 Transaction
 Alert list 103, 107, 141, 145
 Transaction column
 Transaction Information 81, 119
 transaction consumption
 CICS Feature 101
 IMS Feature 139
 TRANSACTION field
 Transaction Information 80, 118
 Transaction History Overview panel
 CICS Feature 82
 Transaction Information panel
 CICS Feature 80
 IMS Feature 118
 Transaction Overview panel
 IMS Feature 120
 transactions in CICS
 identifying top consumers 101
 transactions overview
 limiting 80, 118
 TSO command
 to access AQM-APC Main Menu 4

U

use TOP Scope
 New User Alert 29
 user alert 104, 108, 142, 146
 inserting CICS Feature 105, 109, 143, 147
 user alerts
 bulk 35
 USER reason
 Central Component 18
 USER reason code
 Central Component 23
 CICS Feature 104, 108, 142, 146

V

Valid average calculations
 Job Overview 36

W

Wait
 Measurement list 11
 Measurement overview 13
 wait time consumed 99, 137
 website address xiv
 wildcards 3

using with query facility 32

X

X line command 2

We'd Like to Hear from You

How satisfied are you with the
information in this book?

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
Accurate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Complete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easy to Find	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easy to Understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well Organized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Applicable to Your Tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall Satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

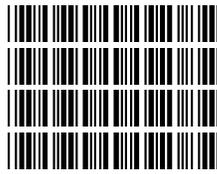
Please tell us how we can improve this book:

May we contact you to discuss your responses? No
 Yes (please fill out the following)

Name: _____ Title: _____
Telephone: _____ Company: _____
Fax: _____ Type of Business: _____

Please mail or fax this form to your AQM-APC product distributor.

Thank You!



25692

The Application Performance Specialists

A.P.M. AG