

# Description of Rules

## Appendix A

This appendix contains a description of each rule that results in a finding by the DASD Component of CPEXpert. The description summarizes the rule, lists predecessor rules, discusses the rationale for the finding, and recommends action.

The summary of the rule presents a short description of the finding.

The predecessor rules are listed so you can follow the line of reasoning leading to a particular rule being executed.

The discussion describes as much as necessary of the operation of the computer system (the hardware, MVS, the Workload Manager, etc.) as it relates to the particular rule. The purpose of the discussion is to explain the reasoning behind the rule, and what causes the rule to be produced.

The recommendations suggest possible actions that should be considered based on the findings. In many cases, multiple possible actions are listed. You must determine which actions should be taken (this determination is based upon the suitability of the actions to your own environment, the financial implications of the action, and the "political" acceptability of the action.)

The rules are organized in numerical order. However, not all numbers are represented. The LIST OF RULES in this appendix lists all rules that are included in the initial release of the DASD Component.

The DAS2nn rules are very similar to the DAS1nn rules. The major difference in the DAS2nn rules is that they relate to the "expanded" analysis of "loved one" workload. Consequently, the narrative is somewhat different. However, the DAS2nn rules will often refer you to the DAS1nn rules for more detailed discussion and suggestions.

You may wish to read all of the rules in this appendix, just to see the type of problems that are encountered in different installations. However, it is not necessary to read all of the rules. It is necessary only to read the rules that apply to your installation. The rules that apply to your installation are identified by the report produced from the DASCPE Module.

## List of Rules

<b><u>RULE</u></b>	<b><u>DESCRIPTION</u></b>
DAS000	Sysplex performance characteristics of significant volumes
DAS050	Performance characteristics of significant volumes
DAS100	Volume with worst overall performance
DAS102	Volume with next worst overall performance
DAS105	Volume performance was not consistently poor in any area
DAS110	Seeking was the major cause of I/O response delay
DAS111	Seeking was probably caused by independent applications
DAS112	Seeking was probably caused by a single application
DAS113	Worst seeking was probably caused by independent applications
DAS114	Worst seeking was probably caused by a single application
DAS115	Seeking was cause of I/O delay on page pack
DAS120	Missed rotational position sensing was major cause of I/O response delay
DAS121	Volumes contributing to missed rotational position sensing
DAS123	Non-DASD devices contributed to RPS delay
DAS125	Applications contributing to RPS delay
DAS130	Large PEND time was major cause of I/O response delay
DAS131	Large PEND time was caused by utilization of paths to device
DAS132	Large PEND time was caused by another system

<b><u>RULE</u></b>	<b><u>DESCRIPTION</u></b>
DAS133	Large PEND time was caused by controller busy delays
DAS140	High connect time was major cause of I/O response delays
DAS150	High IOSQ was major cause of I/O response delays
DAS151	Queuing was probably caused by independent applications
DAS152	Queuing was probably caused by a single application
DAS153	Worst queuing was probably caused by independent applications
DAS154	Worst queuing was probably caused by a single application
DAS160	Missed cache read hits was major cause of response delay
DAS170	There did not appear to be a problem with the device
DAS180	Applications accessing the volume with the worst performance
DAS185	Applications accessing the volume during the period with worst performance
DAS200	Volume with worst overall performance from the perspective of the critical workload
DAS202	Volume with next worst overall performance from the perspective of the critical workload
DAS205	Volume performance was not consistently poor in any area
DAS210	Seeking was the major cause of response delay to the critical applications
DAS220	Missed rotational position sensing was major cause of response delay to the critical applications
DAS221	Volumes contributing to missed rotational position sensing

<b><u>RULE</u></b>	<b><u>DESCRIPTION</u></b>
DAS223	Non-DASD devices contributed to RPS delay
DAS225	Applications contributing to RPS delay DAS230 Large PEND time was major cause of response delay to the critical applications
DAS231	Large PEND time was caused by utilization of paths to device
DAS232	Large PEND time was caused by another system
DAS233	Large PEND time was caused by controller busy delays
DAS240	High connect time was major cause of response delays to the critical applications
DAS250	High IOSQ was major cause of response delays to the critical applications
DAS260	Missed cache read hits was major cause of response delay to the critical applications
DAS270	There did not appear to be a problem with the device
DAS280	Non-critical job steps used this volume and were a major cause of response delays to the critical applications
DAS285	Non-critical job steps used this volume during the period of worst performance and were a major cause of response delays to the critical applications
DAS287	Other applications did not reference the volume

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<b><u>RULE</u></b>	<b><u>DESCRIPTION</u></b>
DAS300	Perhaps shared DASD caused performance problems
DAS310	Seeking probably was caused by shared DASD conflicts
DAS330	Large PEND time probably was caused by shared DASD conflicts
DAS360	Missed cache hits probably were caused by shared DASD conflicts
DAS380	Applications potentially causing shared DASD conflicts
DAS385	Applications potentially causing worst shared DASD conflicts
DAS390	Performance problems apparently were not caused by shared DASD conflicts
DAS400	Access characteristics of significant data sets

<b><u>RULE</u></b>	<b><u>DESCRIPTION</u></b>
DAS600	Excessive Control Area (CA) splits occurred
DAS604	Excessive secondary extents were allocated
DAS605	Excessive extents were used and secondary allocation unit was small
DAS606	Primary or Secondary allocation unit was small
DAS607	VSAM data set is close to maximum number of extents
DAS610	Relatively small CI size was used for sequential processing
DAS611	Relatively large CI size was used for direct processing
DAS612	Relatively large CI size was used for mixed processing
DAS620	The number of data buffers should be increased
DAS621	The number of index buffers should be equal to index levels
DAS622	The number of index buffers should be more than STRNO value
DAS625	NSR was used, but a large percent of the access was direct
DAS635	LSR was used, but a large percent of the access was sequential