

# HP Operations Smart Plug-in for Sybase

for HP Operations Manager for HP-UX, Linux, and Solaris

Software Version: 12.04

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## Reference Guide

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# 1 Sybase Metrics

This chapter provides detailed and summary listings of the HP Operations Smart Plug-in for Databases (DB SPI) metrics for Sybase, and explains pertinent information about how they work, text contained in the DB SPI Sybase logfile policies, and DB SPI Sybase Scheduled task policies. The information provided here should prove valuable in understanding each metric, especially if customization is desired.

## Inside Sybase Policies

DB SPI measurement threshold policies are designed to be efficient and easy to use, often with no modifications necessary. However, if you decide to modify them, this document provides summary as well as detailed information to refer to as you make changes.

- ▶ In gathering data for Sybase metrics, DB SPI uses DBCC commands, which are equivalent to executing the "sp\_sysmon" stored procedure. In Sybase versions earlier than 12.5.3, no other tool which performs "sp\_sysmon" or the equivalent DBCC commands can be running at the same time as the DB SPI DBCC commands, including the Sybase Monitor Server. Otherwise, the results of both applications will be damaged and incorrect. This problem is corrected in DB SPI versions A.09.10 and later, for Sybase versions 12.5.3 and later.

For quick reference, metric information is summarized in the pages that follow. Detailed information for each metric follows the summary.

## Metric Column Key

Some columns in the metric summaries contain abbreviations or values that can be interpreted as follows:

Column Heading	Column content
INTERVAL	Frequency at which a metric is collected and analyzed; m= minutes h=hour d=day
RESET	W/O reset: Without reset Cont = Continuous ##% = Reset Value (With Reset)
THRESHOLD (Default Threshold)	Any "0.5" value means that the threshold is set at "0."Because HPOM alarms occur on <= or >=, the threshold is set to 0.5.

<b>Column Heading</b>	<b>Column content</b>
TYPE)	S=Server D=Database O=Object
A or G or both	A=alarming metric G=graphing metric
RPT ACCESS	Report Access (refers to whether DB SPI-generated ASCII reports are available and how to access them): Auto=Automatic Action Opt=Operator Action Tool=Tool Bank



Not all columns appear in all database metrics as some data is not available for some database applications; a blank column represents "Not Applicable or Not Available."

## Sybase Metric Summary

Sybase Metric	Description	Area	Type	Interval	Threshold	Min/Max	Reset	Severity	A or G	Rpt Access	Graph
S001_UtilByCPUPct	% CPU Utilization	CPU	S	5 m	95% for 16 m	Max	W/O	Critical Major Minor Warning	A & G	Opt	CPU
S002_DatabaseServerMonitor	Monitors the database server	Server	S	5 m	1	Max	W/O	Critical	A		
S003_ContextSwitch	Context task switching	CPU	S	5 m	30%	Max	W/O	Warning	A & G	Opt	CPU
S203_ContextSwitch	Context task switching (drill down)	CPU	S	5 m	30% for 8 min	Max	W/O	Warning	A	Opt	
S004_TransLogFullPct	% space free in transaction log	Database	S	15 m	10%	Min	W/O	Major	A & G	Auto, Tool & Opt	DB
S204_TransLogFullPct	% space free in transaction log (drill down)	Database	S	15 m	10%	Min	W/O	Major	A	Opt	
S005_SegmentSpacePct	% space free in database segments	Database	D	15 m	10%	Min	W/O	Major	A	Auto & Tool	
S205_SegmentSpacePct	% space free in database segments - drill down	Database	D	15 m	10%	Min	W/O	Major	A	Auto	

<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S305_SegmentSpacePct	% of space free in database segment	Database	D	N/A	Min	10%	W/O	Major	A	Tool	
S405_SegmentSpacePct	% space remaining on database segments - drill down	Database	D	N/A	Min	10%	W/O	Major	A	Tool	
S206_DatabaseStatus	Database status and connection check	Database	D	15 m	1.5 0.5	Max	W/O	Major Major	A	Auto	
S306_DBUseCheck	Database status	Database	D	N/A	0.5	Max	Cont	Major	A	Auto & Tool	
S007_ConnectUsersPct	% of maximum users connected	Database	S	5 m	90%	Max	80%	Warning	A	Auto, Tool & Opt	DB
S011_ProcessStatus	Database process check	Server	S	N/A	0.5	Max	W/O	Critical	A		
S012_EnginesOffCnt	# of engines offline	Server	S	5 m	0.5	Max	Cont	Critical	A & G	Auto	
S013_DiskIOPct	% of total I/O performed by specific disks	I/O	S	5 m	50%	Max	W/O	Minor	A		
S213_DiskIOPct	% of total I/O performed by specific disks (drill down)	I/O	S	5 m	10% for 8 min	Max	W/O	Minor	A		

<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S014_OpenDbRemCnt	# of open databases remaining	Server	S	5m	2	Min	W/O	Major	A & G		
S015_OpenIndexPct	% of open indexes	Server	S	5m	90%	Max	W/O	Major	A & G		
S016_SpacedUsedPct	% space used on virtual device.	Disk Space	S	1h	95%	Max	W/O	Minor	A & G	Auto, Tool & Opt	Disk
S216_SpacedUsedPct	% space used on virtual device (drill down)	Disk Space	S	1h	95%	Max	W/O	Minor	A	Opt	
S017_MirrDevNoActCnt	# of mirror devices not active	Server	S	5m	0.5	Max	Cont	Major	A & G	Auto	
S027_ActivCursorsCnt	# of active cursors	Server	S	5m	10	Max	W/O	Warning	A & G	Auto, Tool & Opt	Server
S029_AvgLksByProcCnt	Average number of locks per process	Server	S	5m	30	Max	W/O	Warning	A & G	Auto, Tool & Opt	Disk
S031_DataCachePct	% data cache as % of total memory	Data Cache	S	1d	20%	Min	30%	Warning	A & G	Auto, Tool & Opt	Cache
S032_ProcdreCachePct	% procedure cache from disk	Data Cache	S	5m	20%	Max	W/O	Major	A & G	Auto, Tool & Opt	Cache

<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S033_DataCachMissPct	% of data cache misses	Data Cache	S	5 m	5%	Max	W/O	Major	A & G	Auto, Tool & Opt	Cache
S035_CacheUtilztnPct	% cache utilization	Data Cache	S	5 m	50%	Max	W/O	Major	A & G	Auto, Tool & Opt	Cache
S235_CacheUtilztnPct	% cache utilization by cache	Data Cache	S	5 m	40% for 8 min	Max	W/O	Major	A	Opt	
S036_LrgeIODeniedPct	% large IO denied	Data Cache	S	5 m	3%	Max	W/O	Major	A & G	Auto, Tool & Opt	Cache
S236_LrgeIODeniedPct	% large IO denied by cache	Data Cache	S	5 m	3% for 8 min	Max	W/O	Major	A	Opt	
S037_LrgeIOUtilPct	% of large I/O utilization (large I/O effectiveness)	Memory	S	5 m	50%	Min	W/O	Major	A & G	Opt	Memory
S237_LrgeIOUtilPct	% of large I/O utilization (large I/O effectiveness - drill down)	Memory	S	5 m	50% for 8 min	Min	W/O	Major	A		
S038_APFDeniedPct	% of asynchronous pre-fetch (APF) denied	Memory	S	5 m	10%	Max	W/O	Major	A & G	Auto, Tool & Opt	Memory

Sybase Metric	Description	Area	Type	Interval	Threshold	Min/Max	Reset	Severity	A or G	Rpt Access	Graph
S039_FullULCFlushPct	% of full user log cache flushes	Memory	S	5 m	50%	Max	W/O	Major	A & G	Opt	Memory
S043_HeavySQLNum	# of heavy SQL statements	SQL Query Monitoring	S	15 m	10	Max	W/O	Warning	A	N/A	N/A
S044_AvgPackSizeSnt	Average network packet size sent in bytes	Network	S	5 m	400	Max	W/O	Major	A & G	Auto, Tool & Opt	Network
S045_AvgPackSizeRcvd	Average network packet size received in bytes	Network	S	5 m	400	Max	W/O	Major	A & G	Auto, Tool & Opt	Network
S046_HigPrioChngsPct	% of high priority switches	Process	S	5 m	40%	Max	W/O	Major	A & G	Opt	Process
S047_MedPrioChngsPct	% of med priority switches	Process	S	5 m	40%	Max	W/O	Major	A & G	Opt	Process
S048_LowPrioChngsPct	% of low priority switches	Process	S	5 m	40%	Max	W/O	Major	A & G	Opt	Process
S049_BlockedObjNum	# of blocked objects	Errors	S	15 m	10	Max	N/A	Warning	A	N/A	N/A
S050_CPUAppLognPct	% CPU for application /login as percent of total	Process	S	5 m	10%	Max	W/O	Major	A & G	Opt	Process

<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S250_CPUAppLognPct	% CPU for application /login as percent of total (drill down)	Process	S	5 m	10% for 8 min	Max	W/O	Major	A	Opt	Process
S051_IOAppLognPct	% I/O for application /login as percent of total	Process	S	5 m	10%	Max	W/O	Major	A & G	Opt	Process
S251_IOAppLognPct	% I/O for application /login as percent of total (drill down)	Process	S	5 m	10% for 8 min	Max	W/O	Major	A	Opt	Process
S053_LocksUserPct	% of user locks in use	Server	S	5 m	80%	Max	W/O	Major	A & G	Auto, Tool & Opt	Server
S054_OpnObjectsUsdPct	% open objects used/ available	Server	S	5 m	80%	Max	W/O	Major	A & G	Auto, Tool & Opt	Server
S055_BlockdProcesses	# of blocked processes	Server	S	5 m	3	Max	W/O	Major	A & G	Auto, Tool & Opt	Server
S256_VictimBlocker	Blocked process & its blocking process	Server	S	5 m	5 15	Max	W/O	Warning Major	A	Auto & Opt	
S057_DeadlockCnt	# of deadlocks	Server	S	5 m	2	Max	W/O	Major	A & G	Opt	Server



<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S061_ConectPerUsrCnt	Average number of connections per user	Server	S	5 m	2	Max	W/O	Warning	A & G	Auto, Tool & Opt	Server
S062_LogSemaWaitPct	% log semaphores waited for	Server	S	5 m	10%	Max	W/O	Major	A & G	Opt	Server
S064_WorkrProcesRate	Worker process requests/second rate	Parallel	S	5 m	10	Max	W/O	Minor	A & G	Opt	Parallel
S065_ParallelQryRate	Parallel queries/second rate	Parallel	S	5 m	10	Max	W/O	Minor	A & G	Opt	Parallel
S066_ESQRequestRate	Extended Stored Procedure (ESP) requests/second	Parallel	S	5 m	3	Max	W/O	Minor	A & G	Opt	Parallel
S067_WrkrPrcRqDenPct	% worker process requests denied	Parallel	S	5 m	10%	Max	W/O	Major	A & G	Auto, Tool & Opt	Parallel
S068_WrkrMmRqFailPct	% worker process memory requests failed	Parallel	S	5 m	10%	Max	W/O	Major	A & G	Auto, Tool & Opt	Parallel
S069_PQRunTAdjustPct	% of parallel query runtime adjustments	Parallel	S	5 m	10%	Max	W/O	Major	A & G	Auto, Tool & Opt	Parallel

<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S070_HeapInsertPct	% heap inserts	Server	S	5 m	50%	Max	W/O	Major	A & G	Opt	Index
S071_NCIxReqMntIUPct	Average number of non-clustered indexes requiring maintenance for inserts and updates	Server	S	5 m	4%	Max	W/O	Major	A & G	Opt	Index
S072_NCIxReqMntDIPct	Average number of non-clustered indexes requiring maintenance for deletes	Server	S	5 m	4%	Max	W/O	Major	A & G	Opt	Index
S073_SpinLockContPct	% spinlock contention by cache	Memory	S	5 m	15%	Max	W/O	Major	A & G	Auto, Tool & Opt	Memory
S273_SpinLockContPct	% spinlock contention by cache (drilldown)	Memory	S	5 m	15% for 8 min	Max	W/O	Major	A	Opt	
S074_BuffGrabDrtyPct	% buffers grabbed dirty by cache and pool	Memory	S	5 m	5%	Max	W/O	Major	A & G	Auto, Tool & Opt	Memory
S274_BuffGrabDrtyPct	% buffers grabbed dirty by cache and pool (drill down)	Memory	S	5 m	5% for 8 min	Max	W/O	Major	A	Opt	

Sybase Metric	Description	Area	Type	Interval	Threshold	Min/Max	Reset	Severity	A or G	Rpt Access	Graph
S075_ComplteDskIOPct	% completed disk I/O	Disk	S	5 m	80%	Min	W/O	Major	A & G	Opt	Memory
S076_CacheHitMissPct	% data cache misses by cache	Memory	S	5 m	5%	Max	W/O	Major	A & G	Auto, Tool & Opt	Memory
S077_PhysReadsRate	# of physical reads per second	I/O Stats	S	5 m	10	Max	W/O	Warning	A	N/A	N/A
S078_LogicReadsRate	# of logical reads per second	I/O Stats	S	5 m	100	Max	W/O	Warning	A	N/A	N/A
S079_CommXactsCnt	# of transactions	Database	D	5 m	50	Max	W/O	Warning	A	N/A	N/A
S276_CacheHitMissPct	% data cache misses by cache (drill down)	Memory	S	5 m	5% for 8 min	Max	W/O	Major	A	Opt	
S080_BferWashInIOPct	% of buffers in wash already in I/O	Memory	S	5 m	10%	Max	W/O	Major	A & G	Auto, Tool & Opt	Memory
S280_BferWashInIOPct	% of buffers in wash already in I/O (drill down)	Memory	S	5 m	10% for 8 min	Max	W/O	Major	A	Opt	
S081_BferWashDrtyPct	% of buffer washed dirty	Memory	S	5 m	10%	Max	W/O	Major	A & G	Auto, Tool & Opt	Memory

<b>Sybase Metric</b>	<b>Description</b>	<b>Area</b>	<b>Type</b>	<b>Interval</b>	<b>Threshold</b>	<b>Min/Max</b>	<b>Reset</b>	<b>Severity</b>	<b>A or G</b>	<b>Rpt Access</b>	<b>Graph</b>
S281_BferWashDrtyPct	% of buffer washed dirty (drill down)	Memory	S	5 m	10% for 8 min	Max	W/O	Major	A	Opt	
S285_RepThreadStatus	Replication Server thread status	Server	S	5 m	0.5	Max	W/O	Critical	A	Auto	
S286_RepSegUsedPct	% of segments used on Replication Server partitions	Server	S	5 m	90%	Max	W/O	Minor	A		

## Metric Specification Description

Metric Number	The identification number assigned to the metric. All Sybase metrics are in the range 2000 to 2999. 2001 to 2099 : Standard Server Metrics 2201 to 2299 : Drill Down Metrics 2301 to 2399 : Standard Database Metrics 2401 to 2499 : Drill Down Database Metrics
Name	The name assigned to the metric. All Sybase metrics start with Sxxx, where xxx is the last 3 digits of the metric number.
Severity	What is the severity of the metric? (Critical, Major, Minor, Warning, Normal)
Description	What the metric means
Alarming and/or Graphing metric	Is the metric an alarming metric (A) or a graphing metric (G) or both (A & G)? (A, G, or A & G)
Collection Interval	How often is the metric collected and analyzed? (5 min, 15 min, 1 hour, 1 time daily)
Min/Max Threshold	Does the HPOM threshold represent a Minimum or Maximum value?
Threshold	What is the default HPOM threshold (if any)? (*=Threshold value is really 0, but HPOM alarms occur at <= or >= values. Since a 0 value would trigger an alarm, the threshold is set to 0.5)
Reset (value)	Does the threshold generate a message/alarm once (without reset), again when another value is detected (with reset) or when the original, exceeded threshold value continues at every collection interval (continuous)? (Without reset, With reset, Continuous)
Message Text	What messages may be displayed?
Instruction Text	Problem-solving information, located in the Annotations area of the generated message; also in the metric definition contained in this reference manual. (Probable causes, Potential impact, Suggested actions, and Reports)
Report Type	What type of report is generated (if any)? (e.g. SQL, Custom StoredProc, Sybase StoredProc)
Report Location	If a report is available, how is it generated? (Operator=Operator action, Auto=Auto action (in Annotations of Message Details), Tool Bank, N/A)  Note: All the reports that are automatic actions or operator actions are also in the Tool Bank in HPOM. However, metrics that are MeasureWare Only metrics (no alarms, just MW data) do not have an HPOM policy for Operator or Auto actions, so they are ONLY in the Tool Bank.

Area	To what logical area (if any) does the metric belong? (CPU, Database, Disk (Virtual Device), Data Cache, Memory, Network, Process, Server, Parallel Processing)
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## Metric S001\_UtilByCPUPct

Metric Number	2001
Name	UtilByCPUPct
Severity	Critical Major Minor Warning
Description	% of CPU utilization.
Alarming and/or Graphing Metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	95% for 16 min
Reset (value)	Without reset
Message Text	DBSPI-2001.1:CPU utilization (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Sybase engine utilization percentage in Adaptive Server has exceeded the HPOM threshold; that is, the percentage of time Adaptive Server Engine uses the allotted CPU time interval.</p> <p><b>Probable cause(s):</b> Very high volume of transactions which require processing above &amp; beyond simple I/O.</p> <p>Potential impact: Perceived performance is likely to begin degrading as the utilization approaches 100%.</p> <p><b>Suggested action(s):</b> We recommend that as Sybase engine utilization exceeds 70% at peak, you begin talking about processor upgrades or additional processors with your hardware vendor. Alternatively, begin performance tuning on the application.</p> <p>The operator action for the metric generates a CPU PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	CPU

## Metric S002\_DatabaseServerMonitor

Metric Number	2002
Name	DatabaseServerMonitor

Metric Number	2002
Severity	Critical
Description	Monitors the Database Server
Alarming and/or Graphing metric	Alarming
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	1.0
Reset (value)	Without reset
Message Text	DBSPI-2002.1: Cannot connect to Sybase database server <\$OPTION(dbserve)>.
Instruction Text	Cannot connect to the Sybase database server. <b>Probable cause(s):</b> The server is not running. <b>Suggested action(s):</b> Start the server.
Report Type	N/A
Report Location	N/A
Area	Server



## Metric S003\_ContextSwitch

Metric Number	2003
Name	ContextSwitch
Severity	Warning
Description	Context task switching
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	30%
Reset (value)	Without reset
Message Text	DBSPI-2003.1:Task context switch due to type <\$OPTION(type)> (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserv)>. Other types of context switches may also exceed the threshold.
Instruction Text	<p>Task context switch percentage has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Dependent on Item, see description by Formula.</p> <p>Potential impact: This will cause a degradation in utilization of the CPUs and may create a higher than necessary CPU utilization</p> <p><b>Suggested action(s):</b> Evaluate any cause other than 'Task Yields (Voluntary)' or 'Other' that account for more than 5% of the total. Check the Performance and Tuning Guide for recommendations based on each.</p> <p>The operator action for the metric generates a CPU PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	CPU

## Metric S203\_ContextSwitch

Metric Number	2203
Name	ContextSwitch
Severity	Warning
Description	Context task switching - drill down

Metric Number	2203
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	30% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2203.1:Task context switch due to type <\$OPTION(type)> (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Task context switch percentage for specific types has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Dependent on Item, see description by Formula.</p> <p>Potential impact: This will cause a degradation in utilization of the CPUs and may create a higher than necessary CPU utilization</p> <p><b>Suggested action(s):</b> Evaluate any cause other than 'Task Yields (Voluntary)' or 'Other' that account for more than 5% of the total. Check the Performance and Tuning Guide for recommendations based on each.</p> <p>The operator action for the metric generates a CPU PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	CPU

## Metric S004\_TransLogFullPct

Metric Number	2004
Name	TransLogFullPct
Severity	Major
Description	% space free in transaction log
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2004.1:% of space free in transaction log full is too low (>=<\$THRESHOLD>%) for one or more databases. Most serious is <\$OPTION(database_name) at <\$VALUE>%.
Instruction Text	<p>Percentage of space free in the transaction log for one or more databases is lower than the HPOM threshold.</p> <p><b>Probable cause(s):</b> High transaction volume, low transaction dump rate.</p> <p>Potential impact: At 100% full, all transaction processing will abort or suspend, depending on database settings.</p> <p><b>Suggested action(s):</b> You need to periodically dump (truncate) the transaction log. If you do not, the log will grow unchecked until it fills up. You can either turn on the database option: sp_dboption database, 'trunc log on chkpt' true, which is NOT recommended on a production machine, or you can dump the transaction log, which cleans out all completed transaction. You should automate cleaning out the transaction log on a periodic basis, before the threshold is reached. If you are cleaning out the transaction log, but it is not getting any smaller, you have a long-running transaction which is not complete, or you may have an aborted transaction in the database which has not been marked as complete in the log. As a last resort, you can shut down and restart the server. This will mark the incomplete transaction as complete (and rolled back).</p> <p>The automatic action for this metric generates a report showing database name and log full percentage for each database.</p> <p>The operator action for the metric generates a 'database' PerfView graph.</p>
Report Type	SQL
Report/Description	Automatic, operator initiated, and tool bank.

Metric Number	2004
Area	Database

## Metric S204\_TransLogFullPct

Metric Number	2204
Name	TransLogFullPct
Severity	Major
Description	% space free in transaction log (drill down)
Alarming and/or Graphing metric	Alarming only
Collection Interval	15 min
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2204.1:% of free space in the transaction <\$VALUE>% for database <\$OPTION(dbserve)> too low (>=<\$THRESHOLD>).
Instruction Text	<p>Percentage of free space in the transaction log for one specific database is lower than the HPOM threshold.</p> <p><b>Probable cause(s):</b> High transaction volume, low transaction dump rate.</p> <p>Potential impact: At 100%, all transaction processing will abort or suspend, depending on database settings.</p> <p><b>Suggested action(s):</b> You need to periodically dump (truncate) the transaction log. If you do not, the log will grow unchecked until it fills up. You can either turn on the database option: sp_dboption database, 'trunc log on chkpt' true, which is NOT recommended on a production machine, or you can dump the transaction log, which cleans out all completed transaction. You should automate cleaning out the transaction log on a periodic basis, before the threshold is reached. If you are cleaning out the transaction log, but it is not getting any smaller, you have a long-running transaction which is not complete, or you may have an aborted transaction in the database which has not been marked as complete in the log. As a last resort, you can shut down and restart the server. This will mark the incomplete transaction as complete (and rolled back).</p> <p>The operator action for this metric generates a report showing database name and log full percentage for each database.</p>
Report Type	SQL
Report Location	Operator initiated.
Area	Database

## Metric S005\_SegmentSpacePct

Metric Number	2005
Name	Segment space percent
Severity	Major
Description	Percentage space free in database segments
Alarming and/or Graphing metric	Alarming only
Collection Interval	15 min
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2005.1: % of space free for one or more segments for database <\$OPTION(database)>, server <\$OPTION(dbserve)> too low (\\<=<\$THRESHOLD>%). Most serious is <\$OPTION(segment_name)> at <\$VALUE>% space free.
Instruction Text	<p>Percentage of space free for one or more segments for a database has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Space in the database is filling up.</p> <p><b>Potential impact:</b> At 100%, a message stating 'Unable to allocate space on segment segname' and the inability to allocate more pages for objects on that segment.</p> <p><b>Suggested action(s):</b> Allocate more space for the segment, using the alter database statement, or remove some data from the existing segment (archival). The automatic action report for this metric shows segment information for each database including segment name/ number, unreserved pages, total size and percent free.</p>
Report Type	Automatic
Report Location	Automatic and tool bank.
Area	Database

## Metric S205\_SegmentSpacePct

Metric Number	2205
Name	Segment space percent - drill down
Severity	Major
Description	Percentage space free in database segments

Metric Number	2205
Alarming and/or Graphing metric	Alarming only
Collection Interval	15 min
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2205.1: % of space free for segment <\$OPTION(segment_name)> (<\$VALUE>%) too low ( \\ \<=<\$THRESHOLD>%) for database <\$OPTION(database)>, server <\$OPTION(dbserve)>.
Instruction Text	<p>Percentage of space free for a specific segment for a database has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Space in the database is filling up.</p> <p><b>Potential impact:</b> At 100%, a message stating 'Unable to allocate space on segment segname' and the inability to allocate more pages for objects on that segment.</p> <p><b>Suggested action(s):</b> Allocate more space for the segment, using the alter database statement, or remove some data from the existing segment (archival).</p> <p>The automatic action report for this metric shows segment information for each database including segment name/number, unreserved pages, total size and percent free.</p>
Report Type	Automatic
Report Location	Automatic
Area	Database

## Metric S305\_SegmentSpacePct

Metric Number	2305
Name	% space free in database segments
Severity	Major
Description	Percentage space free in database segments
Alarming and/or Graphing metric	Alarming only
Collection Interval	N/A
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	Without reset.
Message Text	DBSPI-2305.1: % of space free for one or more segments for database <\$OPTION(dbname)>, server <\$OPTION(dbserve)> too low (\ \ <=<\$THRESHOLD>%). Most serious is <\$OPTION(segment_name)> at <\$VALUE>% space free.
Instruction Text	<p>Percentage of space free for one or more segments for a database has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Space in the database is filling up.</p> <p>Potential impact: At 100%, a message stating 'Unable to allocate space on segment segname' and the inability to allocate more pages for objects on that segment.</p> <p><b>Suggested action(s):</b> Allocate more space for the segment, using the alter database statement, or remove some data from the existing segment (archival).</p> <p>The automatic action report for this metric shows segment information for each database including segment name/number, unreserved pages, total size and percent free.</p>
Report Type	Automatic
Report Location	Tool bank
Area	Database

## Metric S405\_SegmentSpacePct

Metric Number	2405
Name	SegmentSpacePct
Severity	Major



Metric Number	2405
Description	% space remaining on database segments - drill down
Alarming and/or Graphing metric	Alarming only
Collection Interval	N/A
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	Without reset.
Message Text	DBSPI-2405.1: % of space free for segment <\$OPTION(segment_name)> (<\$VALUE>%) too low (\ \<=\$THRESHOLD>%) for database <\$OPTION(dbname)>, server <\$OPTION(dbserve)>.
Instruction Text	<p>Percentage of space free for a specific segment for a database has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Space in the database is filling up.</p> <p>Potential impact: At 100%, a message stating 'Unable to allocate space on segment segname' and the inability to allocate more pages for objects on that segment.</p> <p><b>Suggested action(s):</b> Allocate more space for the segment, using the alter database statement, or remove some data from the existing segment (archival).</p> <p>The automatic action report for this metric shows segment information for each database including segment name/number, unreserved pages, total size and percent free.</p>
Report Type	Automatic
Report Location	Tool bank.
Area	Database

## Metric S206\_DatabaseStatus

Metric Number	2206
Name	Database Status
Severity	Major
Description	Database status and connection check
Alarming and/or Graphing metric	Alarming only
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	Condition 2206.1 = 1.5 (connection) Condition 2206.2 = 0.5 (status)
Reset (value)	Without reset
Message Text	DBSPI-2206.1: Unable to connect to database <\$OPTION(database_name)> in database server <\$OPTION (dbserv)>. DBSPI-2206.2: The database <\$OPTION(database_name)> has a problem, database status <\$OPTION(database_status)>, <\$OPTION(status_msg)>.
Instruction Text	<p><b>Condition 2206.1</b>, description: Could not connect to a database.  <b>Probable cause(s):</b> The database may be corrupt, or the 'Single user' database option may be turned on.            Potential impact: Database is unavailable.  <b>Suggested action(s):</b> Check database configuration options using sp_helpdb, and, reconfigure if that is the problem. If the database is corrupt, reload the database from a backup.</p> <p><b>Condition 2206.2</b>, description: A database has a bad status.            Potential impact: Database is unavailable.  <b>Suggested action(s):</b> If the database is corrupt, reload the database from a backup.            The automatic action for this metric generates a report showing database status information for each database.</p>
Report Type	Automatic
Report Location	Automatic
Area	Database

## Metric S306\_DBUseCheck

Metric Number	2306
Name	DBUseCheck
Severity	Major
Description	Database status
Alarming and/or Graphing metric	Alarming only
Collection Interval	N/A
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Continuous
Message Text	DBSPI-2306.1:Unable to connect to database (<\$OPTION(dbname)> in server <\$OPTION(dbserve)>).
Instruction Text	<p>Could not connect to a database.</p> <p><b>Probable cause(s):</b> The database may be corrupt, or the 'Single user' database option may be turned on.</p> <p>Potential impact: Failure</p> <p><b>Suggested action(s):</b> Check database configuration options using sp_helpdb, and, reconfigure if that's the problem. If the database is corrupt, reload the database from a backup.</p> <p>The automatic action for this metric generates a report showing database status information for each database.</p>
Report Type	Automatic
Report Location	Automatic and tool bank.
Area	Database

## Metric S007\_ConnectUsersPct

Metric Number	2007
Name	ConnectUsersPct
Severity	Warning
Description	% of maximum users connected
Alarming and/or Graphing metric	Alarming & Graphing

Metric Number	2007
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	90%
Reset (value)	With reset 80%
Message Text	DBSPI-2007.1:% of maximum users connected (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>
Instruction Text	<p>Percentage of maximum users connected has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> More than the expected number of users is connected.</p> <p>Potential impact: Failure of new users to connect.</p> <p><b>Suggested action(s):</b> Increase the number of user connections or identify why so many processes are connected. This is sometimes caused by buggy applications which do not free user connections.</p> <p>The automatic action for this metric generates a report showing users connected and statistics about each.</p> <p>The operator action for the metric generates a 'database' PerfView graph.</p>
Report Type	SQL and Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Database

## Metric S011\_ProcessStatus

Metric Number	2011
Name	Process Status
Severity	Critical
Description	Checks whether the critical processes are running on a data server. This metric reports the name of any missing critical process.
Alarming and/or Graphing metric	Alarming
Collection Interval	N/A
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-2011.1: The process <\$OPTION(process_name)> was not running on Sybase database server <\$OPTION(dbserve)>.
Instruction Text	<b>Probable Cause(s):</b> A critical process was not running on the Sybase database server due to a Sybase internal problem. Potential impact: Failure. <b>Suggested Action(s):</b> Restart the Sybase database server.
Report Type	N/A
Report Location	N/A
Area	Server

## Metric S012\_EnginesOffCnt

Metric Number	2012
Name	EnginesOffCnt
Severity	Critical
Description	Number of engines offline
Alarming and/or Graphing metric	Alarming and Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum

Metric Number	2012
Threshold	0.5
Reset (value)	Continuous
Message Text	DBSPI-2012.1: <\$VALUE> Engines are offline for <\$OPTION(dbserve)>.
Instruction Text	<p><b>Probable Cause(s):</b> Some engines are offline</p> <p><b>Suggested Action(s):</b> Check max online engines configuration value. Use dbcc engine command to bring an engine online if necessary. The automatic action for this metric generates a report configuration value 'Max online engines' and status of all engines.</p>
Report Type	SQL
Report Location	Automatic
Area	Server

## Metric S013\_DiskIOPct

Metric Number	2013
Name	DiskIOPct
Severity	Minor
Description	% of total I/O performed by specific disks
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	50%
Reset (value)	Without reset
Message Text	DBSPI-2013.1:% of I/O performed on one or more disks is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is <\$OPTION(logical_name)><\$OPTION(physical_name)> at <\$VALUE>%.
Instruction Text	<p>Percentage of I/O performed on one or more disks has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Poor distribution of I/O across disks. The HPOM threshold could be too low. The threshold should be set to 100/(# of disks) + 10 (the extra 10% is a variant buffer).</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reorganize the data on the disks; (look up the sp_addsegment statement in the Admin manuals). This metric shows you which of your physical devices are performing I/O as a percentage of all I/O. You can make decisions based on which disks are relatively the busiest.</p>
Report Type	N/A
Report Location	N/A
Area	I/O

## Metric S213\_DiskIOPct

Metric Number	2213
Name	DiskIOPct
Severity	Minor
Description	% of total I/O performed by specific disks - drill down

Metric Number	2213
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2213.1:% of I/O performed on disk <\$OPTION(logical_name)>( <\$OPTION(physical_name)>) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)> at <\$VALUE>%.
Instruction Text	<p>Percentage of I/O performed on one specific disk has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Poor distribution of I/O across disks. The HPOM threshold could be too low. The threshold should be set to 100/(# of disks) + 10 (the extra 10% is a variant buffer).</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reorganize the data on the disks; (look up the sp_addsegment statement in the Admin manuals). This metric shows you which of your physical devices are performing I/O as a percentage of all I/O. You can make decisions based on which disks are relatively the busiest.</p>
Report Type	N/A
Report Location	N/A
Area	I/O



## Metric S014\_OpenDbRemCnt

Metric Number	2014
Name	OpenDbRemCnt
Severity	Major
Description	Number of open databases remaining
Alarming and/or Graphing metric	Alarming and Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	2
Reset (value)	Without reset
Message Text	DBSPI-2014.1: # of Open Databases remaining for server <\$OPTION(dbserve)> too low (\\<=<\$THRESHOLD>). Configuration value of open databases is <\$OPTION(config)>, number of open databases is <\$OPTION(number)>.
Instruction Text	<b>Probable Cause(s):</b> Number of open databases is too small Potential impact: Performance <b>Suggested Action(s):</b> Use system procedures sp_countmetadata and sp_monitorconfig to determine optimal number of open databases: sp_countmetadata 'open databases' sp_monitorconfig 'open databases' Then use the sp_configure to configure number of open databases. Example: sp_configure 'number of open databases', 50
Report Type	N/A
Report Location	N/A
Area	Server

## Metric S015\_OpenIndexPct

Metric Number	2015
Name	OpenIndexPct
Severity	Major
Description	% of open indexes.
Alarming and/or Graphing metric	Alarming and Graphing

Metric Number	2015
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	90%
Reset (value)	Without reset
Message Text	DBSPI-2015.1: % of Open Indexes for server <\$OPTION(dbserve)> is too high (>=<\$THRESHOLD>%). Configuration value of open indexes is <\$OPTION(Config_val)>, number of active indexes is <\$OPTION(Num_active)>.
Instruction Text	<p><b>Probable Cause(s):</b> The percentage of open indexes is too high  Potential impact: Performance</p> <p><b>Suggested Action(s):</b> Use system procedures sp_countmetadata and sp_monitorconfig to determine optimal number of open indexes:  sp_countmetadata 'open indexes'  sp_monitorconfig 'open indexes'</p> <p>Then use the sp_configure to configure number of open indexes.  Example: sp_configure 'number of open indexes', 700</p>
Report Type	N/A
Report Location	N/A
Area	Server

## Metric S016\_SpacedUsedPct

Metric Number	2016
Name	SpacedUsedPct
Severity	Minor
Description	% space used on virtual device
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Maximum
Threshold	95%
Reset (value)	Without reset
Message Text	DBSPI-2016.1:Space used % on one or more virtual devices is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is virtual device <\$OPTION(virt_dev_name)> at <\$VALUE>%.
Instruction Text	<p>Percentage of space used on one or more disks has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Allocated storage is approaching total storage. Potential impact: Inability to extend databases.</p> <p><b>Suggested action(s):</b> Allocate more disks.</p> <p>The automatic action for this metric generates a report showing device allocation summary and device wise disk fragments and databases. The operator action for the metric generates a 'disk' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Disk (Virtual Device)

## Metric S216\_SpacedUsedPct

Metric Number	2216
Name	SpacedUsedPct
Severity	Minor
Description	% space used on virtual device - drill down
Alarming and/or Graphing metric	Alarming only

Metric Number	2216
Collection Interval	1 hour
Min/Max Threshold	Maximum
Threshold	95%
Reset (value)	Without reset
Message Text	DBSPI-2216.1:% space used on virtual device <\$OPTION(virt_dev_name)> (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserv)>.
Instruction Text	<p>Percentage of space used on a specific device has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Allocated storage is approaching total storage.  Potential impact: Inability to extend databases.</p> <p><b>Suggested action(s):</b> Allocate more disks.</p> <p>The operator action for this metric generates a report showing device allocation summary and device wise disk fragments and databases.</p>
Report Type	Sybase StoredProc
Report Location	Operator initiated.
Area	Disk (Virtual Device)

## Metric S017\_MirrDevNoActCnt

Metric Number	2017
Name	MirrDevNoActCnt
Severity	Major
Description	Number of mirror devices not active.
Alarming and/or Graphing metric	Alarming and Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Continuous
Message Text	DBSPI-2017.1: <\$VALUE> Mirror devices are not active for <\$OPTION(dbserve)>.
Instruction Text	<b>Probable Cause(s):</b> Some mirror devices are not active Potential impact: Failure. <b>Suggested Action(s):</b> The automatic action for this metric generates a report showing devices for which mirroring is enabled, but not active.
Report Type	SQL
Report Location	Automatic
Area	Server

## Metric S027\_ActivCursorsCnt

Metric Number	2027
Name	ActivCursorsCnt
Severity	Warning
Description	# of active cursors
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum

Metric Number	2027
Threshold	10
Reset (value)	Without reset
Message Text	DBSPI-2027.1:# of cursors (<\$VALUE>) too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>Number of active cursors has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Very high utilization.</p> <p>Potential impact: Cursors cause contention, locking, and general performance problems due to slow data access &amp; likely bad coding.</p> <p><b>Suggested action(s):</b> Write set-processing code.</p> <p>The automatic action for this metric generates a report showing details open cursors.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	Custom StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Server

## Metric S029\_AvgLksByProcCnt

Metric Number	2029
Name	AvgLksByProcCnt
Severity	Warning
Description	Average number of locks per process
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	30
Reset (value)	Without reset
Message Text	DBSPI-2029.1:Average number of locks per process (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>Average number of locks per process has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Large transactions.</p> <p>Potential impact: Contention</p> <p><b>Suggested action(s):</b> This is useful for determining how many locks need to be allocated at configuration time. You will be able to multiply this number by the expected number of processes, and add a fudge factor (try 10%), to determine necessary configuration values.</p> <p>The automatic action for this metric generates a report showing lock configuration information.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	SQL and Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Server

## Metric S031\_DataCachePct

Metric Number	2031
Name	DataCachePct
Severity	Warning
Description	% data cache as % of total memory

Metric Number	2031
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 day
Min/Max Threshold	Minimum
Threshold	20% less than initial value
Reset (value)	30% less than threshold
Message Text	DBSPI-2031.1:% data cache compared to total memory (<\$VALUE>%) is too low ( \\ \ <=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of data cache as a percentage of total memory is lower than the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Increase in other configuration values taking memory away from data cache; 'total memory' has been reduced.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Increase total memory (sp_configure); reduce unnecessary excessive configuration values. Make sure you have sufficient physical memory before reconfiguration.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'cache' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Data Cache



## Metric S032\_ProcdreCachePct

Metric Number	2032
Name	ProcdreCachePct
Severity	Major
Description	% procedure cache from disk
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	20%
Reset (value)	Without reset
Message Text	DBSPI-2032.1:% procedures being read from disk (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of procedures being read from disk has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Procedure cache too small.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Optimally, increase total memory size to increase both the data and procedure cache, or if you have enough available cache, increase percent of memory allocated to procedure cache (sp_configure 'procedure cache').</p> <p>The automatic action for this metric generates a report showing procedure cache and memory configuration information.</p> <p>The operator action for the metric generates a 'cache' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Data Cache

## Metric S033\_DataCachMissPct

Metric Number	2033
Name	DataCachMissPct
Severity	Major
Description	% of data cache misses

Metric Number	2033
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	5%
Reset (value)	Without reset
Message Text	DBSPI-2033.1:% of data cache misses (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of data cache misses has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Data cache too small or configured inefficiently; inefficient SQL or SQL not supported by indexes causing too much data to be looked at.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> This may mean you are starting to measure I/O when the server is starting to load cache, or it may mean that cache is not of sufficient size to contain frequently used data pages. Investigate running SQL and correct; reconfigure and/or increase data cache.</p> <p>The operator action for the metric generates a 'cache' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Data Cache

## Metric S035\_CacheUtilztnPct

Metric Number	2035
Name	CacheUtilztnPct
Severity	Major
Description	% cache utilization
MeasureWare	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	50%
Reset (value)	Without reset
Message Text	DBSPI-2035.1:% utilization for one or more data caches is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is data cache <\$OPTION(cache_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of utilization for one or more data caches has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Cache configured inefficiently, or object bindings configured inefficiently. Also, the threshold could be set too low. The threshold should be set to <math>(100 / (\# \text{ of data caches})) + 10</math> (the extra 10% is a variant buffer).</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Resize caches; or rebalance object bindings to caches.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'cache' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Data Cache

## Metric S235\_CacheUtilztnPct

Metric Number	2035
Name	CacheUtilztnPct
Severity	Major
Description	% cache utilization by cache

Metric Number	2035
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	40% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2235.1:% cache utilization for data cache <\$OPTION(cache_name)> (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserv)>.
Instruction Text	<p>The percentage of utilization for one specific data cache has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Cache configured inefficiently, or object bindings configured inefficiently. Also, the threshold could be set too low. The threshold should be set to (100 / (# of data caches)) + 10 (the extra 10% is a variant buffer).</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Resize caches; or rebalance object bindings to caches.</p> <p>The operator action for this metric generates a report showing cache configuration information.</p>
Report Type	Sybase StoredProc
Report Location	Operator-generated
Area	Data Cache

## Metric S036\_LrgeIODeniedPct

Metric Number	2036
Name	LrgeIODeniedPct
Severity	Major
Description	% large I/O denied
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	3%
Reset (value)	Without reset
Message Text	DBSPI-2036.1:% large I/O denied (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of large I/O denied for the entire server has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Size of large I/O pool not large enough; inefficient mix of 2K reads and large I/O reads.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Your performance will probably benefit from large I/O. If it is getting denied, you are probably spending more time than necessary performing I/O. Investigate individual caches to determine source of problem area then increase size of large I/O pool ; rebalance pools for better mix of 2K and large I/O.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'cache' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Data Cache

## Metric S236\_LrgeIODeniedPct

Metric Number	2236
Name	LrgeIODeniedPct
Severity	Major
Description	% large I/O denied by cache

Metric Number	2236
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	3% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2236.1:% large I/O denied for data cache <\$OPTION(cache_name)> (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserv)>.
Instruction Text	<p>The percentage of large I/O denied for a specific data cache has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Size of large I/O pool not large enough; inefficient mix of 2K reads and large I/O reads.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate individual caches to determine source of problem area then increase size of large I/O pool ; rebalance pools for better mix of 2K and large I/O.</p> <p>The operator action for this metric generates a report showing cache configuration information.</p>
Report Type	Sybase StoredProc
Report Location	Operator initiated.
Area	Data Cache

## Metric S037\_LrgeIOUtilPct

Metric Number	2037
Name	LrgeIOUtilPct
Severity	Major
Description	% of large I/O utilization - large I/O effectiveness
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	50%
Reset (value)	Without reset
Message Text	DBSPI-2037.1:% of large I/O pages read that have been referenced (<\$VALUE>%) is too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of large I/O effectiveness (utilization) for the entire server is lower than the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Ineffective cache scheme.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Large I/O reads many pages at once, rather than only the specific page requested. If the large I/O is not effective, this means you are wasting resources reading pages that are not being used. Investigate individual caches and pools for source of problem, then reconfigure pools for more effective cache scheme.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Memory

## Metric S237\_LrgeIOUtilPct

Metric Number	2237
Name	LrgeIOUtilPct
Severity	Major
Description	% of large I/O utilization - large I/O effectiveness - drill down

Metric Number	2237
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	50% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2037.1:% of large I/O pages read that have been referenced (<\$VALUE>%) is too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	The percentage of large I/O effectiveness (utilization) for a specific data cache is lower than the HPOM set threshold. <b>Probable cause(s):</b> Ineffective cache scheme. Potential impact: Performance <b>Suggested action(s):</b> investigate individual caches and pools for source of problem, then reconfigure pools for more effective cache scheme.
Report Type	N/A
Report Location	N/A
Area	Memory



## Metric S038\_APFDeniedPct

Metric Number	2038
Name	APFDeniedPct
Severity	Major
Description	% of asynchronous pre-fetch (APF) denied
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2038.1:% of asynchronous pre-fetch (APF) denied (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of asynchronous pre-fetch (APF) denied for the server has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Not enough disk structures configured, device semaphore contention (ie I/O contention), number of asynch prefetch buffers not large enough, data cache not large enough.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Increase disk structures (sp_configure 'disk I/O structures'); determine source of semaphore contention and redistribute data on devices to eliminate, increase number of async prefetch buffers (sp_poolconfig), increase data cache (sp_sysmon 'total memory').</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Memory

## Metric S039\_FullULCFlushPct

Metric Number	2039
Name	FullULCFlushPct
Severity	Major

Metric Number	2039
Description	% of full user log cache flushes
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	50%
Reset (value)	Without reset
Message Text	DBSPI-2039.1:% of user log cache flushes (ULC) caused by full ULC (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of full user log cache flushes (ULC) caused by full ULC has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Large transactions filling user log cache causing it to be flushed.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> As this percentage increases, you are experiencing excessive log I/O due to user log cache filling up prior to the end of the transaction. Increase user log cache via sp_configure and reboot server for parameter to take effect (note: this uses memory, and correspondingly reduces the size of default data cache).</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Operator initiated
Report Location	Sybase StoredProc
Area	Memory

## Metric S043\_HeavySQLNum

Metric Number	2043
Name	HeavySQLNum
Severity	Warning
Description	Number of heavy SQL statements
Alarming and/or Graphing metric	Alarming
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	10
Reset (value)	Without reset
Message Text	DBSPI-2043.1: <\$VALUE> heavy SQL statements (LogicalReads \ \>=<\$OPTION(cli_threshold) for <\$OPTION(dbserv)>.
Instruction Text	<b>Probable cause(s):</b> The number of heavy SQL statements is too high. SQL statement is heavy if number of LogicalReads is more than specified threshold. Potential impact: Performance <b>Suggested action(s):</b> N/A
Report Type	N/A
Report Location	N/A
Area	SQL Query Monitoring

You need to do a special configuration to run this metric. Refer to the Chapter 7 of the DB SPI Configuration Guide.

## Metric S044\_AvgPackSizeSnt

Metric Number	2044
Name	AvgPackSizeSnt
Severity	Major
Description	Average network packet size sent in bytes
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	400
Reset (value)	Without reset
Message Text	DBSPI-2044.1:Average network packet size sent (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The average network packet size sent in bytes has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Large amount of data being sent to clients.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> This is informational. As the average packet size approaches the maximum network packet size, you have an indicator that you may get a network performance benefit by increasing the default packet size.</p> <p>The operator action for the metric generates a 'network' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank
Area	Network

## Metric S045\_AvgPackSizeRcvd

Metric Number	2045
Name	AvgPackSizeRcvd
Severity	Major
Description	Average network packet size received in bytes
Alarming and/or Graphing metric	Alarming & Graphing

Metric Number	2045
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	400
Reset (value)	Without reset
Message Text	DBSPI-2045.1:Average network packet size received (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The average network packet size received in bytes has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Large amount of data being received from clients.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> This is informational. As the average packet size approaches the maximum network packet size, you have an indicator that you may get a network performance gain if the information to be sent fits in a packet.</p> <p>The automatic action for this metric generates a report showing max network packet size configuration information.</p> <p>The operator action for the metric generates a 'network' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank
Area	Network

## Metric S046\_HigPrioChngsPct

Metric Number	2046
Name	HigPrioChngsPct
Severity	Major
Description	% of high priority switches
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	40%
Reset (value)	Without reset
Message Text	DBSPI-2046.1:% of high priority changes (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of high priority switches has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Inefficient logical process manager scheme.</p> <p>Potential impact: Performance. Could cause low priority processes to be starved of CPU.</p> <p><b>Suggested action(s):</b> Review priority approach and adjust accordingly. Try to avoid excessive priority switching.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

## Metric S047\_MedPrioChngsPct

Metric Number	2047
Name	MedPrioChngsPct
Severity	Major
Description	% of med priority switches
Alarming and/or Graphing metric	Alarming & Graphing

Metric Number	2047
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	40%
Reset (value)	Without reset
Message Text	DBSPI-2047.1:% of medium priority changes (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of medium priority switches has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Inefficient logical process manager scheme.</p> <p>Potential impact: Performance. Could cause low priority processes to be starved of CPU.</p> <p><b>Suggested action(s):</b> Review priority scheme and adjust accordingly.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

## Metric S048\_LowPrioChngsPct

Metric Number	2048
Name	LowPrioChngsPct
Severity	Major
Description	% of low priority switches
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	40%
Reset (value)	Without reset
Message Text	DBSPI-2048.1:% of low priority changes (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of low priority switches has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> Inefficient logical process manager scheme.</p> <p>Potential impact: Performance. Could cause low priority processes to be starved of CPU.</p> <p><b>Suggested action(s):</b> Review priority scheme and adjust accordingly.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

## Metric S049\_BlockedObjNum

Metric Number	2049
Name	BlockedObjNum
Severity	Major
Description	Number of blocked objects
Alarming and/or Graphing metric	Alarming
Collection Interval	15 min



Metric Number	2049
Min/Max Threshold	Maximum
Threshold	10
Reset (value)	Without reset
Message Text	DBSPI-2049.1: <\$VALUE> blocked objects for <\$OPTION(dbserv)>.
Instruction Text	<p><b>Probable cause(s):</b> The number of blocked objects is too high. The blocked objects are the objects, which have contention more than 0. Potential impact: Performance.</p> <p><b>Suggested action(s):</b> Stop the metric and start sp_object_stats procedure to get names of objects and information about their locks, deadlocks and contention.</p>
Report Type	N/A
Report Location	N/A.
Area	Errors



Do not run this metric with the following metrics as the execution time of the collector will be more.

2001, 3, 8, 9, 10, 13, 18, 21, 32-39, 41, 42, 44-48, 50-54, 57, 62-81, 2236, and 2237

### Metric S050\_CPUAppLognPct

Metric Number	2050
Name	CPUAppLognPct
Severity	Major
Description	% CPU for application/login as percent of total
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2050.1:% of CPU for one or more application/login as percent of total is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is application/login <\$OPTION(app_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of CPU for one or more applications as a percent of total CPU has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> High CPU usage by an individual application or login. The HPOM threshold could be set too low. It should be set to a value that would account for peak application times.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate usage and determine if appropriate. If inappropriate, correct or consider using Resource Limits to constrain usage. It is common for long-running tasks to use a disproportionate amount of resource.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

### Metric S250\_CPUAppLognPct

Metric Number	2250
Name	CPUAppLognPct
Severity	Major
Description	% CPU for application/login as percent of total - drill down

Metric Number	2250
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2250.1: % of CPU for application/login <\$OPTION(app_name)> as percent of total (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of CPU for a specific application as a percent of total CPU has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> High CPU usage by an individual application or login. The HPOM threshold could be set too low. It should be set to a value that would account for peak application times.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate usage and determine if appropriate. If inappropriate correct or consider using Resource Limits to constrain usage. It is common for long-running tasks to use a disproportionate amount of resource.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

## Metric S051\_IOAppLognPct

Metric Number	2051
Name	IOAppLognPct
Severity	Major
Description	% I/O for application/login as percent of total
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2051.1:% of I/O for one or more application/login as percent of total is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is application/login <\$OPTION(app_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of I/O for a one or more applications as a percent of total I/O has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> High disk usage by an individual application or login. The HPOM threshold could be set too low. It should be set to a value that would account for peak application times.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate usage and determine if appropriate. If inappropriate correct or consider using Resource Limits to constrain usage. It is common for long-running tasks to use a disproportionate amount of resource.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

## Metric S251\_IOAppLognPct

Metric Number	2251
Name	IOAppLognPct
Severity	Major
Description	% I/O for application/login as percent of total - drill down

Metric Number	2251
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2251.1: % of I/O for application/login <\$OPTION(app_name)> as percent of total (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of I/O for a specific application as a percent of total I/O has exceeded the HPOM set threshold.</p> <p><b>Probable cause(s):</b> High disk usage by an individual application or login. The HPOM threshold could be set too low. It should be set to a value that would account for peak application times.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate usage and determine if appropriate. If inappropriate correct or consider using Resource Limits to constrain usage. It is common for long-running tasks to use a disproportionate amount of resource.</p> <p>The operator action for the metric generates a 'process' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Process

## Metric S053\_LocksUserPct

Metric Number	2053
Name	LocksUserPct
Severity	Major
Description	% of user locks in use
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	80%
Reset (value)	Without reset
Message Text	DBSPI-2053.1: % of available locks in use (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of user locks in use has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Transactions modifying large amounts of data, possibly using many SQL commands.</p> <p>Potential impact: Performance. Error will be generated when all available locks have been used.</p> <p><b>Suggested action(s):</b> The number of locks configured is fixed at server start-up. When the number of locks is met, other processes requesting locks abort, and new users cannot connect. You should evaluate why this is occurring, then increase number of available locks (sp_configure 'number of locks') and reboot server for change to take effect.</p> <p>Note: This uses memory.</p> <p>The automatic action for this metric generates a report showing lock and memory configuration information.</p> <p>The operator action for the metric generates a 'server' graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Server

## Metric S054\_OpnObjectsUsdPct

Metric Number	2054
Name	OpnObjectsUsdPct
Severity	Major

Metric Number	2054
Description	% open objects used/available
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	80%
Reset (value)	Without reset
Message Text	DBSPI-2054.1:% of open objects used (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of open objects used to available has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Many database objects are in use.</p> <p>Potential impact: Error will occur if attempting to access more objects than allowed.</p> <p><b>Suggested action(s):</b> If this hits maximum values, reconfigure the server for more open objects (note: this uses memory), then reboot server for change to take effect.</p> <p>The automatic action for this metric generates a report showing open objects and memory configuration information.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Server

## Metric S055\_BlockdProcesses

Metric Number	2055
Name	BlockdProcesses
Severity	Major
Description	# of blocked processes
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	3
Reset (value)	Without reset
Message Text	DBSPI-2055.1:# of blocked processes (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The number of blocked processes has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Readers and writers wanting same data/index page, or page locks have escalated to table lock.</p> <p>Potential impact: Performance: blocked processes will wait until block is cleared.</p> <p><b>Suggested action(s):</b> Blocked processes are an indication of contention, which occurs frequently in OLTP and mixed use systems. Action depends on the situation. You may need to restructure indexes; or reschedule load processes when readers are not running, or change page lock promotion thresholds.</p> <p>The automatic action for this metric generates a report showing blocked processes.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	Custom StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Server

## Metric S256\_VictimBlocker

Metric Number	2256
Name	VictimBlocker
Severity	Condition 2256.1 = Major Condition 2256.2 = Warning



Metric Number	2256
Description	Blocked process & its blocking process
Alarming and/or Graphing metric	Alarming
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	Condition 2256.1 = 15 minutes Condition 2256.2 = 5 minutes
Reset (value)	Without reset
Message Text	DBSPI-2256.1 & DBSPI-2256.2: Process <OPTION(victim_spid)> blocked by process <OPTION(blocker_spid)> for <OPTION(time_blocked)> minutes. Blocked login name <OPTION(victim_login)>, Blocker login name <OPTION(blocker_login)>.
Instruction Text	<p>A process has been blocked for a number of minutes that exceeds the HPOM threshold.</p> <p><b>Probable cause(s):</b> Readers and writers wanting the same data/index page, or page locks have escalated to table lock.</p> <p>Potential impact: Performance: blocked processes will wait until the block is cleared.</p> <p><b>Suggested action(s):</b> Blocked processes are an indication of contention, which occurs frequently in OLTP and mixed use systems. Action depends on the situation. You may need to restructure indexes; or reschedule load processes when readers are not running, or change page lock promotion thresholds.</p> <p>The automatic action for this metric generates a report showing blocked processes. The operator action for the metric generates a 'server' graph.</p>
Report Type	Automatic and operator initiated.
Area	Server

## Metric S057\_DeadlockCnt

Metric Number	2057
Name	DeadlockCnt
Severity	Major
Description	# of deadlocks
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	2
Reset (value)	Without reset
Message Text	DBSPI-2057.1:# of deadlocks (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The number of deadlocks has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Two processes are accessing data in different orders, or size of transaction is too large.</p> <p>Potential impact: Performance: one of the deadlocked processes will become the victim and will be terminated by the server.</p> <p><b>Suggested action(s):</b> Deadlocks are a performance hit for two reasons. First, because all of the work of the deadlocked process needs to be rolled back. Second, because it probably has to be done again anyway. Action depends on situation. You may need to restructure indexes; or reschedule load processes when readers are not running, or make transactions shorter/smaller.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Server

## Metric S061\_ConectPerUsrCnt

Metric Number	2061
Name	ConectPerUsrCnt
Severity	Warning
Description	Average number of connections per user

Metric Number	2061
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	2
Reset (value)	Without reset
Message Text	DBSPI-2061.1: Average number of connections in use per login ID (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The average number of connections per user has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Users logging in multiple times or client applications requiring multiple connections.</p> <p>Potential impact: Performance.</p> <p><b>Suggested action(s):</b> None. This is useful in performance analysis to understand how complex individual applications are.</p> <p>The automatic action for this metric generates a report showing login names and number of connections for each.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Server

## Metric S062\_LogSemaWaitPct

Metric Number	2062
Name	LogSemaWaitPct
Severity	Major
Description	% log semaphores waited for
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2062.1:% of log semaphores being waited for (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of log semaphores being waited for has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Contention For Transaction Log Semaphore. Potential impact: Performance.</p> <p><b>Suggested action(s):</b> In an SMP system, you cannot have multiple processors writing to the log at the same time. The log semaphore is that mechanism used by the server to allow one processor to wait for another to write. You can increase user log cache via sp_configure, (and reboot server for parameter to take effect (note: this uses memory)); reduce number of committed transactions by making transaction size bigger or redesigning transactions; reduce the number o multi-database transactions.</p> <p>The operator action for the metric generates a 'server' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Server

## Metric S064\_WorkrProcesRate

Metric Number	2064
Name	WorkrProcesRate
Severity	Minor
Description	Worker process requests/second rate

Metric Number	2064
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10
Reset (value)	Without reset
Message Text	DBSPI-2064.1:# of worker process request per second (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The worker process requests/second rate has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Low transaction volume.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Free checkpoints occur when the housekeeper moves all the way to the beginning of the page chain, and is an indicator that all pages are clean. At that point, a checkpoint marker is written to the log, even though a checkpoint has not occurred. It is an indication of low system updates.</p> <p>The operator action for the metric generates a 'parallel' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Parallel Processing

## Metric S065\_ParallelQryRate

Metric Number	2065
Name	ParallelQryRate
Severity	Minor
Description	Parallel queries/second rate
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10
Reset (value)	Without reset
Message Text	DBSPI-2065.1:# of parallel queries per second (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The number of parallel queries per second has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Parallel query processing, parallel index creation. Potential impact: Performance.</p> <p><b>Suggested action(s):</b> None. This is useful in performance analysis, to determine whether parallel processing is useful, and perhaps what its overall effect is on the system. (you can run a benchmark with Parallel processing turned on, and turned off).</p> <p>The operator action for the metric generates a 'parallel' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Parallel Processing

## Metric S066\_ESQRequestRate

Metric Number	2066
Name	ESQRequestRate
Severity	Minor
Description	Extended Stored Procedure (ESP) requests/second
Alarming and/or Graphing metric	Alarming & Graphing

Metric Number	2066
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	3
Reset (value)	Without reset
Message Text	DBSPI-2066.1:# of extended stored procedure requests per second (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The number of extended stored procedure (ESP) requests per second has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Client requests to extended stored procedures.</p> <p>Potential impact: Performance.</p> <p><b>Suggested action(s):</b> None. This is useful in performance analysis to determine the amount of work being requested by, but not performed by, the server.</p> <p>The operator action for the metric generates a 'parallel' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Parallel Processing

## Metric S067\_WrkrPrcRqDenPct

Metric Number	2067
Name	WrkrPrcRqDenPct
Severity	Major
Description	% worker process requests denied
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2067.1:% of worker process requests denied (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of worker process requests denied has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough worker processes configured.</p> <p>Potential impact: Performance.</p> <p><b>Suggested action(s):</b> Worker processes are use in parallel processing. If you do not have sufficient worker worker processes, then those processes requesting the parallel threads will probably not run as efficiently as single-threaded processes. You should increase the number of worker processes configured (sp_configure 'number of worker processes'). Be sure you have sufficient memory, as this will utilize additional configured server memory.</p> <p>The automatic action for this metric generates a report showing current number of worker threads.</p> <p>The operator action for the metric generates a 'parallel' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Parallel Processing

## Metric S068\_WrkrMmRqFailPct

Metric Number	2068
Name	WrkrMmRqFailPct
Severity	Major



Metric Number	2068
Description	% worker process memory requests failed
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2068.1:% of worker process memory requests that have failed (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserv)>.
Instruction Text	<p>The percentage of worker process memory requests failed has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough worker process memory configured. Potential impact: Performance.</p> <p><b>Suggested action(s):</b> Worker processes are used for parallel processing. As the amount of work performed in parallel increases, the need for memory by the worker processes increased. You can configure 'memory per worker process' using sp_configure.</p> <p>The automatic action for this metric generates a report showing current number of worker threads.</p> <p>The operator action for the metric generates a 'parallel' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Parallel Processing

## Metric S069\_PQRunTAdjustPct

Metric Number	2069
Name	PQRunTAdjustPct
Severity	Major
Description	% of parallel query runtime adjustments
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2069.1:% of worker process requests that are being adjusted at runtime (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of worker process requests that are being adjusted at runtime has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough worker processes configured.</p> <p>Potential impact: Performance.</p> <p><b>Suggested action(s):</b> A runtime adjustment occurs when the optimizer has determined an optimal degree of parallelism, and the worker processes are not available at runtime to perform the query to that degree of parallelism. This is an indicator to increase the number of worker processes configured (sp_configure 'number of worker process').</p> <p>The automatic action for this metric generates a report showing current number of worker threads.</p> <p>The operator action for the metric generates a 'parallel' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Parallel Processing

## Metric S070\_HeapInsertPct

Metric Number	2070
Name	HeapInsertPct
Severity	Major
Description	% heap inserts

Metric Number	2070
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	50%
Reset (value)	Without reset
Message Text	DBSPI-2070.1:% of heap inserts (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserv)>.
Instruction Text	<p>The percentage of heap inserts has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Inserts into tables that do not have clustered indexes; 'select into' inserts, work table inserts.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Check for contention on last page lock for heap tables; create a clustered index on table to randomize inserts; partition tables to create multiple insert points.</p> <p>The operator action for the metric generates an 'index' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Server

### Metric S071\_NCIxReqMntIUPct

Metric Number	2071
Name	NCIxReqMntIUPct
Severity	Major
Description	Average number of non-clustered indexes requiring maintenance for inserts/updates
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	4%
Reset (value)	Without reset
Message Text	DBSPI-2071.1:Average number of non-clustered indexes requiring maintenance for inserts & updates (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The average number of non-clustered indexes (NCI's) requiring maintenance for inserts and updates has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Inserts, updates, and/or deletes on tables that have non-clustered indexes.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Examine index strategy to determine if all non-clustered indexes are required.</p> <p>The operator action for the metric generates an 'index' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Server

### Metric S072\_NCIxReqMntDIPct

Metric Number	2072
Name	NCIxReqMntDIPct
Severity	Major
Description	Average number of non-clustered indexes requiring maintenance for deletes

Metric Number	2072
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	4%
Reset (value)	Without reset
Message Text	DBSPI-2071.1:Average number of non-clustered indexes requiring maintenance for inserts & updates (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The average number of non-clustered indexes (NCI's) requiring maintenance for deletes has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Inserts, updates, and/or deletes on tables that have non-clustered indexes.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Examine index strategy to determine if all non-clustered indexes are required.</p> <p>The operator action for the metric generates an 'index' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Server

## Metric S073\_SpinLockContPct

Metric Number	2073
Name	SpinLockContPct
Severity	Major
Description	% spinlock contention by cache
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	15%
Reset (value)	Without reset
Message Text	DBSPI-2073.1: % of spinlock contention (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for data cache <\$OPTION(cache_name)> for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of spinlock contention for the entire server has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Cache too small; inefficient cache configuration</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Increase cache and reconfigure to use additional named caches.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Memory

## Metric S273\_SpinLockContPct

Metric Number	2273
Name	SpinLockContPct
Severity	Major
Description	% spinlock contention by cache - drill down
Alarming and/or Graphing metric	Alarming only

Metric Number	2273
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	15% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2273.1: % of spinlock contention (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for data cache <\$OPTION(cache_name)> for <\$OPTION(dbserve)>.
Instruction Text	The percentage of spinlock contention for a specific data cache has exceeded the HPOM threshold. <b>Probable cause(s):</b> Cache too small; inefficient cache configuration Potential impact: Performance <b>Suggested action(s):</b> Increase cache and reconfigure to use additional named caches.
Report Type	Sybase StoredProc
Report Location	Operator initiated.
Area	Memory

## Metric S074\_BuffGrabDrtyPct

Metric Number	2074
Name	BuffGrabDrtyPct
Severity	Major
Description	% buffers grabbed dirty by cache and pool
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	5%
Reset (value)	Without reset
Message Text	DBSPI-2074.1:% buffers being grabbed dirty (<\$VALUE>%) too high (<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is data cache <\$OPTION(cache_name)>, pool <\$OPTION(pool_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of buffers grabbed dirty for one or more cache/pool has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Pool/cache size too small</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reconfigure pools/cache for more effective cache scheme. 'Dirty' refers to a data page that has been changed but not written to disk yet. Sybase keeps data in memory arranged in a page chain from most recently used to least recently used. Assuming all of data cache is in use (i.e. the entire chain is in already in use), if a new data page is to be read into memory it must replace a page already in the chain, taken from the least recently used side. If the page to be replaced (grabbed) is dirty, reading in of the new page must wait until the dirty page is written to disk. Hence 'buffers grabbed dirty'. This is quite a performance hit which is why the threshold is so low.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Memory



## Metric S274\_BuffGrabDrtyPct

Metric Number	2274
Name	BuffGrabDrtyPct
Severity	Major
Description	% buffers grabbed dirty by cache and pool (drill down)
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	5% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2274.1:% buffers being grabbed dirty for data cache <\$OPTION(cache_name)> pool <\$OPTION(pool_name)> (<\$VALUE>%) is too high (<=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of buffers grabbed dirty for a specific cache/pool combination has exceeded the HPOM threshold.</p> <p><b>Probable cause(s):</b> Pool/cache size too small</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reconfigure pools/cache for more effective cache scheme. 'Dirty' refers to a data page that has been changed but not written to disk yet. Sybase keeps data in memory arranged in a page chain from most recently used to least recently used. Assuming all of data cache is in use (i.e. the entire chain is in already in use), if a new data page is to be read into memory it must replace a page already in the chain, taken from the least recently used side. If the page to be replaced (grabbed) is dirty, reading in of the new page must wait until the dirty page is written to disk. Hence 'buffers grabbed dirty'. This is quite a performance hit which is why the threshold is so low.</p> <p>The operator action for this metric generates a report showing cache configuration information.</p>
Report Type	Sybase StoredProc
Report Location	Operator initiated.
Area	Memory

## Metric S075\_ComplteDskIOPct

Metric Number	275
Name	ComplteDskIOPct

Metric Number	275
Severity	Major
Description	% completed disk I/O
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	80%
Reset (value)	Without reset
Message Text	DBSPI-2075.1:% of disk I/O's that have been completed (<\$VALUE>%) is too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of completed disk I/O's is lower than the HPOM threshold.</p> <p><b>Probable cause(s):</b> Disk I/O not being completed in a timely fashion could indicate I/O bottlenecks.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate the I/O subsystem.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	N/A
Report Location	Operator initiated.
Area	Disk (Virtual Device)

## Metric S076\_CacheHitMissPct

Metric Number	2076
Name	CacheHitMissPct
Severity	Major
Description	% data cache misses by cache
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	5%
Reset (value)	Without reset
Message Text	DBSPI-2076.1:% of cache misses for one or more data caches is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is data cache <\$OPTION(cache_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of data cache misses for one or more data caches is higher than the HPOM threshold.</p> <p><b>Probable cause(s):</b> Data cache too small or configured inefficiently; inefficient SQL or SQL not supported by indexes causing too much data to be looked at.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Investigate running SQL and correct; reconfigure and/or increase data cache.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Memory

## Metric S077\_PhysReadsRate

Metric Number	2077
Name	PhysReadsRate
Severity	Warning
Description	Number of physical reads per second
Alarming and/or Graphing metric	Alarming
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10
Reset (value)	Without reset
Message Text	DBSPI-2077.1: The number of physical reads per second (<\$VALUE>) for <\$OPTION(dbserve)> is too high.
Instruction Text	<b>Probable cause(s):</b> The number of physical reads is too high. Potential impact: Performance <b>Suggested action(s):</b> N/A
Report Type	N/A
Report Location	N/A
Area	I/O Stats

## Metric S078\_LogicReadsRate

Metric Number	2078
Name	LogicReadsRate
Severity	Warning
Description	Number of logical reads per second.
Alarming and/or Graphing metric	Alarming
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	100
Reset (value)	Without reset
Message Text	DBSPI-2078.1: The number of logical reads per second (<\$VALUE>) for <\$OPTION(dbserve)> is too high.
Instruction Text	<b>Probable cause(s):</b> The number of logical reads is too high. Potential impact: Performance. <b>Suggested action(s):</b> N/A
Report Type	N/A
Report Location	N/A
Area	I/O Stats

## Metric S079\_CommXactsCnt

Metric Number	2079
Name	CommXactsCnt
Severity	Warning
Description	The number of transactions (S079_CommXactsCnt)
Alarming and/or Graphing metric	Alarming
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	50
Reset (value)	Without reset
Message Text	DBSPI-2079.1: The number of transactions (<\$VALUE>) for <\$OPTION(dbserve)> is too high.
Instruction Text	<p><b>Probable cause(s):</b> The number of committed transactions is too high has exceeded the HPOM set threshold. 1. Application Logic. 2. One of the servers may be down during a distributed query.</p> <p>Potential impact: Database Performance</p> <p><b>Suggested action(s):</b> Check application. Check availability of all servers that are transaction participants.</p>
Report Type	N/A
Report Location	N/A
Area	Database

## Metric S276\_CacheHitMissPct

Metric Number	2276
Name	CacheHitMissPct
Severity	Major
Description	% data cache misses by cache - drill down
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min

Metric Number	2276
Min/Max Threshold	Maximum
Threshold	5% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2276.1:% of cache misses for data cache <\$OPTION(cache_name)> (<\$VALUE>%) is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserv)>.
Instruction Text	<p>The percentage of data cache misses for a specific data cache is higher than the HPOM threshold.</p> <p><b>Probable cause(s):</b> data cache too small or configured inefficiently; inefficient SQL or SQL not supported by indexes causing too much data to be looked at.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> investigate running SQL and correct; reconfigure and/or increase data cache.</p> <p>The operator action for this metric generates a report showing cache configuration information.</p>
Report Type	Sybase StoredProc
Report Location	Operator initiated.
Area	Memory

## Metric S080\_BferWashInIOPct

Metric Number	2080
Name	BferWashInIOPct
Severity	Major
Description	% of buffers in wash already in I/O
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2080.1: % of buffers in wash already in I/O for one or more data caches is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is data cache <\$OPTION(cache_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of buffers in wash already in I/O for one or more data caches is higher than the HPOMHPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough data cache configured or configured incorrectly; ineffective use of MRU/LRU strategy.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reconfigure data cache or increase data cache; use fetch and discard strategy for queries that are flushing cache.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Memory

## Metric S280\_BferWashInIOPct

Metric Number	2280
Name	BferWashInIOPct
Severity	Major
Description	% of buffers in wash already in I/O - drill down



Metric Number	2280
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2280.1: % of buffers in wash already in I/O <\$VALUE>% too high (>=<\$THRESHOLD>%) for data cache <\$OPTION(cache_name)> for server <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of buffers in wash already in I/O for a specific data cache is higher than the HPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough data cache configured or configured incorrectly; ineffective use of MRU/LRU strategy.</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reconfigure data cache or increase data cache size for the errant cache; use fetch and discard strategy (see documentation on MRU buffer strategy) for queries that are flushing cache.</p> <p>The operator action for this metric generates a report showing cache configuration information.</p>
Report Type	Sybase StoredProc
Report Location	Operator initiated
Area	Memory

## Metric S081\_BferWashDrtyPct

Metric Number	2081
Name	BferWashDrtyPct
Severity	Major
Description	% of buffer washed dirty
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10%
Reset (value)	Without reset
Message Text	DBSPI-2081.1: % of buffer washed dirty for one or more data caches is too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>. Most serious is data cache <\$OPTION(cache_name)> at <\$VALUE>%.
Instruction Text	<p>The percentage of buffers washed dirty for one or more data caches is higher than the HPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough data cache configured or configured incorrectly; ineffective use of MRU/LRU strategy</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reconfigure data cache or increase data cache; use fetch and discard strategy for queries that are flushing cache.</p> <p>The automatic action for this metric generates a report showing cache configuration information.</p> <p>The operator action for the metric generates a 'memory' PerfView graph.</p>
Report Type	Sybase StoredProc
Report Location	Automatic, operator initiated, and tool bank.
Area	Memory

## Metric S281\_BferWashDrtyPct

Metric Number	2281
Name	BferWashDrtyPct
Severity	Major
Description	% of buffer washed dirty - drill down

Metric Number	2281
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	10% for 8 min
Reset (value)	Without reset
Message Text	DBSPI-2281.1:% of buffer washed dirty (<\$VALUE>%) too high (>=<\$THRESHOLD>) for data cache <\$OPTION(cache_name)> for server <\$OPTION(dbserve)>.
Instruction Text	<p>The percentage of buffers washed dirty for a specific cache is higher than the HPOM threshold.</p> <p><b>Probable cause(s):</b> Not enough data cache configured or configured incorrectly; ineffective use of MRU/LRU strategy</p> <p>Potential impact: Performance</p> <p><b>Suggested action(s):</b> Reconfigure data cache or increase data cache; use fetch and discard strategy for queries that are flushing cache.</p> <p>The operator action for this metric generates a report showing cache configuration information.</p>
Report Type	Sybase StoredProc
Report Location	Operator initiated.
Area	Memory

## Metric S285\_RepThreadStatus

Metric Number	2285
Name	RepThreadStatus
Severity	Critical
Description	Replication Server thread status
Alarming and/or Graphing metric	Alarming
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-2285.1: Thread <\$OPTION(thread_name)> was not running on Replication Server <\$OPTION(dbserve)>.
Instruction Text	A Replication server thread is not running. <b>Probable cause(s):</b> Replication problem. Potential impact: Replication failure. <b>Suggested action(s):</b> An error message should have been displayed in the Replication Server error log. Check the Replication Server error log. The automatic action for this metric generates a report showing information about the threads that are down.
Report Type	SQL
Report Location	Automatic
Area	Server

## Metric S286\_RepSegUsedPct

Metric Number	2286
Name	RepSegUsedPct
Severity	Minor
Description	Percentage segments used on Replication Server partitions
Alarming and/or Graphing metric	Alarming
Collection Interval	5 minute

Metric Number	2286
Min/Max Threshold	Maximum
Threshold	90%
Reset (value)	Without reset
Message Text	DBSPI-2286.1: % segments used on partition <partition name> (<calculated value>%) is too high (>= <threshold>%) for<replication server name>.
Instruction Text	Percentage of segments used on a specific disk partition has exceeded the HPOM threshold. <b>Probable cause(s):</b> Allocated stable queue space is approaching total stable queue space. Potential impact: Inability to store queued transactions. <b>Suggested action(s):</b> Add partitions to the Replication Server or correct a recurring failure that causes the queue to fill.
Area	Server

## Sybase Logfile Policies

This section provides detailed information about the text contained in the DB SPI Sybase logfile policies.

### SYB-1105 Segment is Full

Description	Segment is full
Severity	Major
Message Group	Syb_Fault
Help Text	<b>Probable Cause:</b> There are two possible causes: (1) The transaction log has not been dumped filling up syslogs (2) The database has run out space on this segment The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant. <b>Suggested Action:</b> (1) If you ran out of space in syslogs, dump the transaction log (2) Use ALTER DATABASE or sp_extendsegment to increase size of the segment

Description	Could not allocate memory for the threshold task's argument list, threshold failed.
Severity	Minor
Message Group	Syb_Conf
Help Text	<p><b>Probable Cause:</b></p> <p>This error occurs when a stored procedure associated with a threshold was not initiated because there was not enough memory available in procedure cache.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>To prevent this error from occurring in the future, make sure there is enough memory to run stored procedures associated with a threshold by testing them during the time when your system is most heavily loaded. If there is not enough memory, do one of the following:</p> <p>Use sp_configure to increase the Adaptive Server procedure cache size configuration parameter (increases the percentage of total cache space that is used as procedure cache).</p> <p>Use sp_configure to increase the value of the total memory configuration parameter.</p> <p>Rewrite the stored procedure so that it will execute in the procedure cache available for the Adaptive Server.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-7403

Description	Threshold execution failed, unable to use database.
Severity	Minor
Message Group	Syb_Admin
Help Text	<p><b>Probable Cause:</b></p> <p>A threshold is 'owned' by the user who created it, or the last user to modify it with sp_modifythreshold. Error 7403 occurs when the Threshold Manager tries to use a database and execute a stored procedure and access is denied.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>To prevent this error from occurring in the future, make sure that the owner of each threshold has access to the database to which the threshold applies, and that the user has execute permission on the stored procedure associated with the threshold.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-2812

Description	Threshold stored procedure not found.
Severity	Minor
Message Group	Syb_Admin
Help Text	<p><b>Probable Cause:</b></p> <p>This error occurs when a threshold is exceeded and attempts to fire the stored procedure defined at that threshold limit, and the procedure does not exist in that database.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>Create the stored procedure in the appropriate database and execute the stored procedure manually to check the threshold and take the necessary actions.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-614

Description	A row was accessed that has an illegal length
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>This error may be caused by a hardware problem. This error occurs when Adaptive Server accesses a data or index row whose length is smaller than the minimum row size or greater than the maximum row size. Error 614 can be caused by data corruption during normal processing (for example, an operating system panic occurs, causing interruption in disk writes when using UNIX files for Sybase database devices). This may be due to a problem with Adaptive Server, the operating system, or hardware.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>When this error occurs during normal processing, refer to the 'Sybase® Adaptive Server Enterprise Troubleshooting and Error Messages Guide' for corrective procedures. When this error occurs during recovery, the database is marked suspect and is not accessible. Usually, you must load the database from backup. To do this, follow the instructions below:</p> <ol style="list-style-type: none"> <li>1. If the database in the 614 error is tempdb, check the page number. If this page is not valid for tempdb, the problem may be on another database (possibly due to a bad device). Stop here and contact Sybase Technical Support. If the page is valid for tempdb, or the 614 error refers to a database other than tempdb, continue with Step 2.</li> <li>2. Drop the database. If the drop fails, follow the instructions in 'How to Drop a Database When drop database Fails' in the 'Sybase® Adaptive Server Enterprise Troubleshooting and Error Messages Guide'.</li> <li>3. Create a database for load. Make sure the database you create has sizes at least as large as those in sysusages for the original database (and that all other sysusages values match the original values). Refer to 'create database' in the 'Adaptive Server Enterprise Reference Manual' for information on create database for load.</li> </ol>
Help Text (contd.)	<ol style="list-style-type: none"> <li>4. Load the database from backup. (Refer to 'load database' in the Adaptive Server Enterprise Reference Manual.)</li> <li>5. Use the online database command to make the database available for use.</li> </ol> <p>If loading from backups is not feasible, call Sybase Technical Support. Have the following documentation ready.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>



## SYB-624

Description	Attempt to retrieve row from page via RID failed because the requested RID has a higher number than the last RID on the page.
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>This error may be caused by a hardware problem. This error occurs when Adaptive Server tries to retrieve a row from a data page by specifying the row ID (RID), but the retrieval fails because the requested row ID was a higher number than the last row ID on the page. This can happen:</p> <p>During normal processing, if the leaf page of a corrupt non-clustered index points to an incorrect or nonexistent row ID on a data page.</p> <p>During database recovery at Adaptive Server startup (database recovery also occurs when a load database command is processed). Recovery fails because the data structure that contains the last checkpoint record in the transaction log is pointing to an incorrect or nonexistent record in the log. Errors 624 and 625 occur under similar conditions.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>When this error occurs during normal processing, refer to the 'Sybase® Adaptive Server Enterprise Troubleshooting and Error Messages Guide' for corrective procedures. When this error occurs during recovery, the database is marked suspect and is not accessible. Usually, you must load the database from backup. Follow the instructions below, depending on the version level of your server (if you have dial-in facilities, Sybase Technical Support may be able to correct the problem so that recovery of this database can proceed):</p>
Help Text (contd.)	<ol style="list-style-type: none"> <li>1. Drop the suspect database using instructions in 'How to Drop a Database When drop database Fails' in the 'Sybase® Adaptive Server Enterprise Troubleshooting &amp; Error Messages Guide'.</li> <li>2. Create a database for load. Make sure the database you create has sizes as least as large as those in sysusages for the original database (and that all other sysusages values match the original values). Refer to 'create database' in the Adaptive Server Enterprise Reference Manual for more information on create database for load.</li> <li>3. Load the database from backup (refer to 'load database' in the Adaptive Server Enterprise Reference Manual).</li> <li>4. Use the online database command to make the database available for use.</li> </ol>

## SYB-631

Description	The length passed to delete row routine is incorrect
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Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>This error may be caused by a hardware problem. This error occurs when Adaptive Server attempts to delete a row (via a direct delete or inherently through updating) from an index or data page by specifying the row offset and the row length, and the action fails because the specified values of the offset or row length did not match the actual values. Error 631 can happen under the following conditions:</p> <ul style="list-style-type: none"> <li>* During normal processing, when Adaptive Server tries to delete the row specified by the error message.</li> <li>* During database recovery. Database recovery occurs:</li> <li>* During Adaptive Server start-up</li> <li>* When a load database or load transaction command is processed</li> <li>* Some potential causes of Error 631 are: <ul style="list-style-type: none"> <li>* Data corruption during normal processing (for example, an operating system panic occurs, causing interruption in disk writes when using UNIX files for Sybase database devices). This may be due to a problem with Adaptive Server, the operating system, or hardware.</li> <li>* Hardware failure during loading or dumping.</li> </ul> </li> </ul> <p>Error 631 is probably the result of a more serious underlying problem, and recovering from this error depends on when the error occurred. Follow the instructions in this section, selecting the correct set depending on whether the error occurred during normal processing or during database recovery.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p>

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**Suggested Action:**

When this error occurs during normal processing, refer to the 'Sybase® Adaptive Server Enterprise Troubleshooting and Error Messages Guide' for corrective procedures. When this error occurs during recovery, the database is marked suspect and is not accessible. Usually, you must load the database from backup. To do this, follow the instructions below:

1. Drop the database. If the drop fails, follow the instructions in 'How to Drop a Database When drop database Fails' in the 'Sybase® Adaptive Server Enterprise Troubleshooting and Error Messages Guide'.
2. Create a database for load. Make sure the database you create has sizes as least as large as those in sysusages for the original database (and that all other sysusages values match the original values). Refer to 'create database' in the Adaptive Server Enterprise Reference Manual for more information on create database for load.
3. Load the database from backup. (Refer to 'load database' in the Adaptive Server Enterprise Reference Manual.)
4. Use the online database command to make the database available for use.

If loading from backups is not feasible, call Sybase Technical Support.

One of the following items may help to prevent Error 631 from occurring on recovery:

Use shutdown to shut down Adaptive Server instead of shutdown with nowait after a period of heavy update activity in your databases.

Or:

Checkpoint each database that is being used before shutting down Adaptive Server.

The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.

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## SYB-821

Description	Attempt to unhash a buffer with HASHED status set failed
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>This error may be caused by a hardware problem. Error 821 occurs when Adaptive Server attempts to remove a nonexistent or corrupted page from the data cache.</p> <p>Some potential causes of this error are:</p> <p>Overlapping partitions (refer to 'Correct Use of Raw Partitions' in 'Encyclopedia of Tasks').</p> <p>Hardware failure.</p> <p>An Adaptive Server problem (such as can occur when using the dump transaction with no_log command after a period of heavy user activity in the database).</p> <p>This error can occur during database recovery as well as during normal operation of Adaptive Server.</p> <ol style="list-style-type: none"> <li>1. Check the Adaptive Server error logs to determine whether there are other indications of hardware problems, such as kernel messages reporting I/O errors. If problems exist, solve them.</li> <li>2. Check the operating system error log or run diagnostic utilities to check for I/O errors. If problems exist, solve them.</li> <li>3. Once the actual cause of corruption has been removed shut down and restart Adaptive Server to clear the 821 error. If restarting is not feasible and if you have dial-in facilities, Sybase Technical Support may be able to help resolve the immediate problem.</li> </ol> <p>Using the dump transaction with no_log command can result in an 821 error. Therefore, do not use dump transaction with no_log unless it is absolutely necessary (when dump transaction with truncate_only will not truncate the log).</p> <p>Try using dump transaction with truncate_only first and use the no_log option only as a last resort. Refer to 'Error 1105' for details.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p>
Help Text (contd.)	<p><b>Suggested Action:</b></p> <p>Create the stored procedure in the appropriate database and execute the stored procedure manually to check the threshold and take the necessary actions.</p>

## SYB-903

Description	Unable to find row in sysindexes for clustered index on a system catalog.
Severity	Critical

Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>This error may be caused by a hardware problem. This error occurs when Adaptive Server is unable to access the sysindexes table for a database. Error 903 can occur under the following circumstances when Adaptive Server accesses sysindexes:</p> <p>Actions that involve opening a database since those actions access the sysindexes table for that database (for example, database recovery)</p> <p>Actions that need to access columns in sysindexes. Such actions include:</p> <ul style="list-style-type: none"> <li>- order_by clause compilation.</li> <li>- Running the update statistics command.</li> <li>- Threshold Manager space calculations. Refer to 'Managing Free Space with Thresholds' in the 'Adaptive Server Enterprise System Administration Guide' for information about thresholds.</li> </ul> <p>Possible causes of Error 903 are:</p> <ul style="list-style-type: none"> <li>- A problem has occurred with the device on which sysindexes resides and sysindexes has become corrupted.</li> <li>- The partition on which the database resides has been mounted as a file system or overlapping partitions exist.</li> <li>- An Adaptive Server problem.</li> </ul> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p>
Help Text (contd.)	<p><b>Suggested Action:</b></p> <p>Determine whether the device on which the database resides is damaged and solve any problems that exist.</p> <p>If the database named in the error message is accessible, run dbcc checkdb and dbcc checkcatalog to determine whether the database is corrupted. If the database is corrupted, restore it from backup.</p> <p>If you cannot find any device problems and the database is not corrupted, call Sybase Technical Support.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-1205

Description	Deadlock occurred
Severity	Warning
Message Group	Syb_Perf
Help Text	<p><b>Probable Cause:</b></p> <p>This error occurs when Process A holds a lock on a page that Process B is awaiting, and Process B is holding a lock on the page which Process A is awaiting. This normally results when data is not accessed in the same order by different processes in the application.</p> <p><b>Suggested Action:</b></p> <p>Modify the application to access the tables in the same order every time they are referenced. As a temporary fix, the fillfactor may be modified for the tables that are experiencing the deadlocks. There are two ways to apply a <code>max_rows_per_page</code> value to existing data:</p> <ul style="list-style-type: none"><li>* If the table has a clustered index, drop and re-create the index with a <code>max_rows_per_page</code> value.</li><li>* Use the <code>bcp</code> utility as follows:<ul style="list-style-type: none"><li>- Copy out the table data.</li><li>- Truncate the table.</li><li>- Set the <code>max_rows_per_page</code> value with <code>sp_chgattribute</code>.</li><li>- Copy the data back in.</li></ul></li></ul> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-1608

Description	Abnormal process termination or network error
Severity	Warning
Message Group	Syb_Perf
Help Text	<p><b>Probable Cause:</b></p> <p>This error occurs when a client process stops without informing Adaptive Server and a subsequent attempt by Adaptive Server to send results to this client fails.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>Error 1608 is usually not serious and may be viewed as notification that a client process no longer exists. Some of the possible reasons a client process can disappear are:</p> <ul style="list-style-type: none"><li>* The client application was killed or ended abnormally</li><li>* The client machine was powered off or was restarted</li><li>* There is excessive network traffic</li><li>* The network has been shut down</li></ul> <p>Note: Using Ctrl-c (on non-PC operating systems) to break out of an application should not cause this error. Do not be concerned if this error occurs only sporadically. However, if the error occurs frequently and continuously, or frequently for short periods of time, it may be a result of excessive network traffic or network problems. If you suspect network problems, have your network administrator run diagnostics on the network between the client and the Adaptive Server machines to isolate the problem.</p>

## SYB-Recovery

Description	Database Recovery Duration
Severity	Minor
Message Group	Syb_Perf
Help Text	<p><b>Probable Cause:</b></p> <p>This is not an error. A recovery is performed every time the server is restarted.</p> <p><b>Suggested Action:</b></p> <p>The data collected for each database can be saved and graphed to help determine the length of time the server will take to startup during unscheduled outages.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Trace Server stack trace

Description	Trace Server stack trace, infected with (x)
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> This error is usually caused due to an internal Adaptive Server error.</p> <p><b>Suggested Action:</b> Contact Sybase Technical Support.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect the full stack trace and additional messages that may be relevant.</p>

## SYB-Dopen Device open error

Description	Dopen Device open error
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> This error is commonly caused by hardware problems (usually a missing or offline device), or by faults in the database GAM pages.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b> Check the hardware device and contact Sybase Technical Support if nothing is found.</p>



## SYB-Error 7413

Description	CheckPoint Process Error
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>This message is written to the Adaptive Server error log by the checkpoint process when the last threshold has been exceeded, and the specified number of processes have been put to sleep.</p> <p><b>Suggested Action:</b></p> <p>Ensure that the appropriate last-chance threshold action is executed to create free space in the log. If the procedure did not run for any reason, manually create free space in the transaction log with a dump transaction command and check on the cause of the failure by referring to the documentation in the manual. The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 1601

Description	Not Enough User Connections
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>There are not enough 'user connections' available to start a new process.</p> <p><b>Suggested Action:</b></p> <p>Retry when there are fewer active users, or ask your system administrator to reconfigure SQL Server with more user connections.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Sybase Server is out of locks

Description	SYB-Sybase Server is out of locks
Severity	Warning
Message Group	Syb_Fault

Description	SYB-Sybase Server is out of locks
Help Text	<p><b>Probable Cause:</b> QL Server has run out of LOCKS.</p> <p><b>Suggested Action:</b> Re-run your command when there are fewer active users, or contact a user with System Administrator (SA) role to reconfigure SQL Server with more LOCKS.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-DUMP Database failed

Description	Syb-Dump Database failed
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> When a dump database command is processed, the Backup Server scans for all allocated pages to determine what pages to dump. It begins this scan as soon as it receives an RPC (remote procedure call). Error 3211 is raised when an Adaptive Server RPC to the Backup Server returns an error.</p> <p><b>Suggested Action:</b> 1. Check the Adaptive Server and Backup Server error logs to determine the cause of the error being sent from Adaptive Server.</p> <p>2. Test the connection between the Backup Server and the Adaptive Server by logging into the Adaptive Server through isql and typing :</p> <pre>1&gt; execute backupserver...sp_ps 2&gt; go</pre> <p>where backupserver is the name of your Backup Server. This executes sp_ps on the Backup Server.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Serious Kernel error

Description	SYB-Serious Kernel error
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> Adaptive Server encountered an internal error affecting the current process.</p> <p><b>Suggested Action:</b> Report the error to your System Administrator. The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-System error detected

Description	SYB-Serious Kernel error
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> The Memory Manager allocated, deallocates, and manages memory for the Adaptive Server. It manages an array of structures in the procedure header, each of which represents a physical page of memory in procedure cache and the current byte allocation of that page. As part of its memory deallocation process, Adaptive Server tries to release the pages of memory allocated to a procedure header when they are no longer needed. When Adaptive Server is unable to release that section of memory, Error 707 occurs. Error 707 is caused by memory corruption or an Adaptive Server problem.</p> <p><b>Suggested Action:</b> Since procedure headers are stored in procedure cache, restarting Adaptive Server should clear Error 707. If it does not clear the 707 error or if the 707 error occurs again, contact Sybase Technical Support. The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Network Interface Error

Description	SYB-Network Interface Error
Severity	Critical
Message Group	Syb_Fault

Description	SYB-Network Interface Error
Help Text	<p><b>Probable Cause:</b></p> <p>Error 1602 can occur as a result of any of the following problems in your interfaces file :</p> <ol style="list-style-type: none"> <li>1. Duplicate entries.</li> <li>2. Incorrect network address.</li> <li>3. Other incorrect information such as incorrect host name or illegal port number.</li> </ol> <p><b>Suggested Action:</b></p> <p>Check your interfaces file to make sure everything is correct. If any information is incorrect or duplicate entries exist, use one of the following to make corrections to your interfaces file.</p> <ol style="list-style-type: none"> <li>1. dsedit</li> <li>2. dscp</li> </ol> <p>If you do not find any incorrect in your interfaces file, ask your network administrator to verify (at the operating system level) the entries in the interfaces file to make sure all network connections are working properly.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 1105 System Segment is full

Description	SYB-Error 1105 System Segment is full
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>The master device is full and is producing 1105 errors (system segment is full).</p> <p>Suggested Action :</p> <p>If you run out of space in syslogs, dump the transaction log. Otherwise, use ALTER DATABASE or sp_extendsegment to increase size of the segment.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Bad SQL Statement

Description	SYB-Bad SQL Statement
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> SQL Statement is causing the error.</p> <p><b>Suggested Action:</b> Fix the SQL Statement. The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 605 Page Allocation Corruption

Description	SYB-Bad SQL Statement
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> This serious error occurs when Adaptive Server discovers page allocation corruption. Adaptive Server tries to access a particular object but discovers a page in the page chain for that object whose object ID is different than that of the object being accessed. There is probably either a damaged page chain or an invalid entry in the system tables for that object.</p> <p>Usually this error is detected after the corruption has been written to the database on disk (hard 605) but it can also occur entirely in cache without the damage every being written to disk (transient 605), and is not associated with data corruption.</p> <p>When an error is transient, it means it is reported even though no error condition exists or it exists only in memory. Generally, a transient error is cleared by a reboot of the Adaptive Server, whereas a hard error does not go away with a reboot.</p> <p><b>Suggested Action:</b></p> <ol style="list-style-type: none"><li>1. Run the dbcc checktable command on the second object specified in the error message.</li><li>2. To help determine the full extent of the corruption, run the dbcc checkdb and dbcc checkalloc commands as soon as feasible.</li></ol>

Description	SYB-Bad SQL Statement
Help Text (contd.)	<p>3. Check the Adaptive Server error log for other errors which often accompany a 605 error. If the 605 error is not transient, the problem is severe and you will probably need to restore from known clean backups.</p> <p>4. Either of the following situations may also apply to your Adaptive Server:</p> <p>4.1 If this error occurs after rebuilding the master device or reconfiguring the configuration blocks to the defaults, then the sort order on the new device may not match the sort order in the dump. If the sort orders do not match, call Technical Support for further assistance.</p> <p>4.2 To check if the error occurred as the result of hardware failure, examine your operating system error log and correct hardware problems.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant..</p>

## SYB-Error 3414 Database Recovery Failed

Description	Database Recovery Failed
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> This error occurs during startup when Adaptive Server could not complete the recovery of the database listed in the error message.</p> <p><b>Suggested Action:</b> To determine why recovery failed, examine the Adaptive Server error log for any errors prior to the 3414 error. It is important to identify the errors before the first occurrence of the 3414 error because subsequent attempts to start Adaptive Server may not give the detailed error information you need to diagnose the problem.</p>

## SYB-Error 4504 Not Enough Space

Description	Not Enough Space
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> Command failed due to resource limitation.</p> <p><b>Suggested Action:</b> Modify the command to fit available resources, retry when the resource is available, or contact your System Administrator to address the resource problem.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Transaction Recovery Failed

Description	Transaction Recovery Failed
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> This error may be caused by a hardware problem. This error occurs during recovery when an end (commit or rollback) transaction log record was found that does not have a corresponding begin transaction record. Therefore, the transaction could not be rolled back or committed and recovery or load could not complete for that database.</p> <p>You cannot use the affected database until whatever caused the error has been corrected because Adaptive Server marks the database suspect.</p> <p><b>Suggested Action:</b> If the error occurred during start-up ( rather than during load database or load transaction), determine which database had the error by looking at your Adaptive Server error log.</p> <p>If you have a clean backup, restore your database using that backup.</p> <p>If you do not have a clean backup, call Sybase Technical support.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## YB-Severity Sybase Error Message

Description	Severity Sybase Error Message above severity 19
Severity	Critical
Message Group	Syb_Fault

Description	Severity Sybase Error Message above severity 19
Help Text	<p><b>Probable Cause:</b></p> <p>There are 845 messages that have severity greater than 19 that should be alarmed. These errors range from corrupted databases, to hardware or OS problems.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>See the Sybase manual 'Troubleshooting and Error Messages Guide' to look up the error message and follow the explanation to determine the cause and resolution.</p>

## SYB-Memory Corruption Error

Description	Memory Corruption Error
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>A process is a task being carried out by Adaptive Server.</p> <p>Processes can be in various states such as running or waiting for resources. For each user process and some system processes, Adaptive Server maintains a Process Status Structure (PSS) to track the state of the process and its use of resources. It also maintains an array of structures in the procedure header, each of which represents a physical page of memory in procedure cache.</p> <p>When a process completes, the Adaptive Server performs cleanup tasks such as freeing up resources used by the task. This error is reported when Adaptive Server cleans up after normal completion of a batch process, and determines that the memory usage tracked by the procedure header does not match the usage total maintained in the PSS. This error may be due to an Adaptive Server problem.</p> <p><b>Suggested Action:</b></p> <p>No Action is required, since this is an informational message and does not result in any incorrect behavior. Upon detecting the memory count mismatch, Adaptive Server corrects the appropriate counter, completes the cleanup tasks, and continues processing.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>



## SYB-Warning

Description	Warning
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> WARNING message. see the detailed message for the exact cause.</p> <p><b>Suggested Action:</b> Use the error number and look up the Sybase Error Reference manual for the corrective action.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 4020

Description	Error 4020
Severity	Warning
Message Group	Syb_Fault

Description	Error 4020
Help Text	<p><b>Probable Cause:</b></p> <p>All client/server communication occurs over a network via packets. Clients initiate a connection to the server. The connection sends client requests and server responses.</p> <p>Error 4020 is raised when the server detects an overflow in the destination buffer while reading one or more characters from the client. The error breaks the connection the server.</p> <p>Possible reasons for Error 4020 include:</p> <ol style="list-style-type: none"> <li>1. application errors</li> <li>2. corrupt packets being transmitted.</li> <li>3. incorrect network configuration.</li> </ol> <p><b>Suggested Action:</b></p> <p>Collect all relevant information about the circumstances in which the error occurred: character set differences on client and server, changed or new applications, recent changes in the network configuration, and so on.</p> <p>Check for coding errors in the application which may be causing incorrectly sized packets to be sent.</p> <p>Check for possible packet corruption within the network.</p> <p>Check the network configuration. For example, if there is 7-bit communication at one end, and 8-bit at the other end, check that the network is properly configured to handle this setup.</p> <p>Check that Adaptive Server is correctly configured to work with the underlying network packet size or buffer size on your system. Relevant server parameters include:</p> <ul style="list-style-type: none"> <li>* default network packet size</li> <li>* maximum network packet size</li> <li>* total memory</li> </ul> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 9128

Description	Error 9128; out of memory error
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>Adaptive Server could not perform the requested action due to out of memory error.</p> <p><b>Suggested Action:</b></p> <p>Contact your System Administrator.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 4408

Description	Error 4408
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b> Command failed when a non-configurable limit was exceeded.</p> <p><b>Suggested Action:</b> Reconnect to the Adaptive Server, and report the error to your System Administrator.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-I/O Request Delayed

Description	I/O Request Delayed
Severity	Warning
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <ol style="list-style-type: none"><li>1 .Adaptive Server is configured for a different rate of concurrent asynchronous I/O requests than the operating system is configured for. Every time an I/O request has to be requeued in Adaptive Server's I/O queues, there is a decrease in overall performance due to requeuing overhead.</li><li>2. Adaptive Server is configured for a lower throughput rate of concurrent asynchronous I/O that it is capable of.</li></ol> <p>Suggested Action : The following I/O-related Adaptive Server configuration parameters and operating system parameters play a role when this error occurs:</p> <ol style="list-style-type: none"><li>1. disk I/O structures - the initial number of block I/O structures at Adaptive Server Startup. This is an Adaptive Server configuration parameter.</li><li>2. max async i/os per server - the number of asynchronous I/O requests outstanding at one time for Adaptive Server. This Adaptive Server configuration parameter applies only to multiprocessor machines.</li><li>3. max async i/os per engine - the number of asynchronous I/O requests outstanding at one time for one engine ( in case of multiprocessor machines) and the maximum number of asynchronous I/O requests outstanding at one time for Adaptive Server (in case of a single processor machines ). This is an Adaptive Server configuration parameter.</li></ol>

Description	I/O Request Delayed
Help Text (contd.)	<p>4. Asynchronous I/O operating system parameters.</p> <p>Determine the current I/O related Adaptive Server configuration parameter settings by running the following commands :</p> <pre>1&gt; sp_configure \"disk i/o structures\" 2&gt; go 1&gt; sp_configure \"max async i/os per engine\" 2&gt; go 1&gt; sp_configure \"max async i/os per server\" 2&gt; go</pre> <p>Use the instructions below to determine appropriate values and use sp_configure to change the values.</p> <p>In general :</p> <ol style="list-style-type: none"> <li>1. set max async i/os per server to a value less than or equal to the total allowable I/O count for the system on which the server is running.</li> <li>2. set max async i/os per engine to a value less than or equal to max async i/os per server.</li> </ol> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## SYB-Error 678

Description	Severity Sybase Error Message above severity 19
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>Probable Cause : This error is raised when Adaptive Server is unable to locate and read an object into a data cache. The error occurs in the following situations:</p> <ol style="list-style-type: none"> <li>1. When dbcc checkalloc finds that an allocation structure or extent belongs to a non-existent object. The error does not prevent you from continuing other operations. However, each occurrence of this error represents a loss of up to eight pages on disk, or 16K. The pages cannot be used until the error is corrected.</li> <li>2. When the configuration parameter sort page count is set to a very high value, and a stack overflow occurs during subsequent operations.</li> </ol> <p>Suggested Action :</p> <p>If the error is raised by dbcc checkalloc, it is due to an Adaptive Server problem, contact Sybase Technical Support for assistance.</p> <p>If the configuration parameter sort page count is set to a very high value, try using a smaller value for this parameter.</p> <p>The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.</p>

## Sybase Adaptive Server shutdown by request.

Description	Sybase Adaptive Server shutdown by request.
Severity	Warning
Message Group	Syb_Fault
Help Text	<b>Probable Cause:</b> Server was shutdown. <b>Suggested Action:</b> Restart Adaptive Server. The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.

## Sybase Adaptive Server starting up

Description	Sybase Adaptive Server starting up
Severity	Warning
Message Group	Syb_Fault
Help Text	<b>Probable Cause:</b> Server was started <b>Suggested Action:</b> None The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.

## SYB-Severity 17-19 Error Message

Description	Severity Sybase Error Message between severity 17-19
Severity	Warning
Message Group	Syb_Fault
Help Text	<b>Probable Cause:</b> There are hundreds or thousands of messages that have severity between 17 and 19 that should be alarmed. <b>Suggested Action:</b> Look at the tail end of the Sybase logfile for more details. Then see the Sybase manuals to look up the error message and follow the explanation to determine the cause and resolution. The automatic action for this condition runs 'tail -100' against the logfiles to collect additional messages that may be relevant.

## SYB-Severity >19 Error Message

Description	Severity Sybase Error Message above severity 19
Severity	Critical
Message Group	Syb_Fault
Help Text	<p><b>Probable Cause:</b></p> <p>There are 845 messages that have severity greater than 19 that should be alarmed. These errors range from corrupted databases, to hardware or OS problems.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p> <p><b>Suggested Action:</b></p> <p>See the Sybase manual 'Troubleshooting and Error Messages Guide' to look up the error message and follow the explanation to determine the cause and resolution.</p>

## Scheduled Task Policies

The Scheduled Task policy commands run on the managed nodes at a regular interval to collect metric data, and send a message to the management server to indicate the success or failure of the command. Use these policies if you want to run commands on one or more managed nodes— once or according to a specific schedule.

The following table lists all the Sybase Scheduled Task policies:

Policy Name	Description	Metrics
DBSPI-Syb-Additonal-YYmin	Runs Sybase DBSPI c/a every 15 min with Additional metrics	S011, S306
DBSPI-Syb-Repserver-05min	Runs Sybase Replication Server DBSPI c/a every 5 min with Replication Server metrics.	S285, S286
DBSPI-Syb-UDM-YYmin	Runs the Sybase DBSPI collector/analyzer every YY minutes.	27XX
DBSPI-MeasureWare	DBSPI MeasureWare Data Feed (every 5 minutes)	N/A
DBSPI-Syb-05min	Runs Sybase DBSPI c/a every 5 min with Standard AND Drill Down metrics	S001, S002, S003, S007 -S010, S012-S015, S017, S018, S021, S027, S029, S032, S033, S035-S039, S041, S042, S044, S048, S050-S051, S053-S055, S057, S061-S076, S077-S079, S080, S081, S203, S213, S235, S236, S237, S250, S251, S256, S273, S274, S276, S280, S281
DBSPI-Syb-15min	Runs Sybase DBSPI c/a every 15 min with Standard AND Drill Down metrics	S004, S005, S043, S049, S206, S204, S205
DBSPI-Syb-1d	Runs Sybase DBSPI c/a every 1 day with Standard AND Drill Down metrics	S031
DBSPI-Syb-1hr	Runs Sybase DBSPI c/a every 1 hr with Standard AND Drill Down metrics	S016, S216

<b>Policy Name</b>	<b>Description</b>	<b>Metrics</b>
DBSPI-Syb-1d-Reporter	Runs the Sybase DBSPI collector/analyzer once per day with Reporter metrics	S222, S223, S224, S226
DBSPI-Syb-05min-Reporter	Runs the Sybase DBSPI collector/analyzer every 5 min with Reporter metrics	S225
DBSPI-Syb-1d-Reporter-NT	Runs the Sybase DBSPI collector/analyzer once per day with Reporter metrics	S222, S223, S224, S226
DBSPI-Syb-05min-Reporter-NT	Runs the Sybase DBSPI collector/analyzer every 5 min with Reporter metrics	S225



## 2 Sybase Tools, Reports, and Graphs

This chapter provides Sybase specific information on Tools, Reports, and Graphs. For information on launching tools, configuring DB SPI to generate reports and graphs, and other DB SPI common topics, see the *HP Operations Smart Plug-in for Databases Installation and Configuration Guide*.

### Tools

The DB SPI includes tools that apply to all databases, and tools that apply to the specific database you are using.

The DB SPI common tools are located under:

- *Tool Bank* → *DB-SPI* → *Admin* (for UNIX nodes)
- *Tool Bank* → *DB-SPI* → *Admin Windows* (for Windows nodes)

For more information on common tools, see the *HP Operations Smart Plug-in for Databases Installation and Configuration Guide*.

Sybase SPI specific tools are located under, **Tool Bank**→ **DB-SPI**→ **Sybase**.

The Sybase collector command is `dbspicas`.

The following table lists the Sybase tools. You must assign the tools to HPOM operators to enable them to run the tools:

**Table 1 Sybase SPI tool**

Tool	Description	Command
isql	Runs sql statements, executes stored procedures.	<code>dbspials -i isql</code>
Start DB Server	Starts the selected data server.	<code>dbspials -i dbstart</code>
Stop DB Server	Shuts down a selected data server.	<code>dbspials -i dbstop</code>
Sybase Server Status	Returns status information for a selected data server.	<code>dbspials -i dbstatus</code>
Sybase Tables	List of sybase tables on database server.	<code>dbspiasl -i tables</code>
Free Space	Lists log size for each of the databases.	<code>dbspials -i freespace</code>
UNIX Login	Unix login as Sybase user.	<code>dbspixterm -e su - sybase</code>

- ▶ Sybase Tools except Sybase Reports and Sybase Reports Windows can be run on HP-UX, Linux, and Solaris nodes only, not on Windows nodes.

**Figure 1 Sybase SPI Tools**



## Reports

HPOM's generated reports cover the *availability*, *size*, and *workload* of each system's databases. Automatically generated every night, these web-based reports provide you with a routine means of checking the health and efficiency of specific databases.

By showing consolidated information, available otherwise only in pieces, reports provide you with a more complete view of how your database continues to perform over time.

The first reports are generated after HPOM runs through its first nightly schedule. From that point on, you can expect to see updated reports every day because HPOM, by default, re-generates reports every night with the day's data.

The following table lists DB SPI reports available from the HPOM console. The last four columns match those used by Reporter. In a few cases, a metric has different value IDs. For example, when Sybase metric S222\_DBSize data is shown next to a value ID column with a number "1" in it, the data indicates "Megabytes Allocated"; data collected for the same metric next to a value ID column with a number "2" in it indicates "Megabytes Free."

**Data source name:** DBSPI\_SYB\_REPORT

**Specification file to create the data source** dbspismsg.sp

**Database Instance name:** <name of the database instance>

**Table 2 Sybase Reports available from the HPOM Console**

Report Name	Description	Reporter Table Columns			
		Metric id	Object id	Value id	Value
Sybase Database Size	Database size in MB allocated and free	S222	Database Name	1	Megabytes Allocated
				2	Megabytes Free
Sybase Table Size	Table size in MB allocated and free	S223	Table Name	1	Megabytes Allocated
				2	Megabytes Free
Sybase Virtual Device Size	Virtual device size in MB allocated	S224	Virtual Device Name	1	Megabytes Allocated
				2	Megabytes Free
Sybase Availability	Reports uptime information	S225	Server Instance Name	1	Up=5 Down=0
Sybase Workload Sybase I/O	Number of physical reads and writes to the disk since the last collection for each tablespace.	S226	Server Instance Name	1	Sybase I/O rate
*Sybase Sessions	Percentage of maximum number of sessions	S007	These metrics are stored in the graphing data source.		
*Sybase Transactions	Number of transactions	S008			

**Table 2 Sybase Reports available from the HPOM Console**

Sybase Active Message Severity	Message severities for unacknowledged messages as shown over extended time period.	N/A, these are HPOM on HP-UX, Linux, and Solaris reports.
Sybase History Message Severity	Message severities for acknowledged messages as shown over extended time period.	
Sybase History Message Severity	Message severities for acknowledged messages as shown over extended time period.	
Sybase Active Messages - Top 20	Top 20 unacknowledged messages at the time of report generation	
Sybase History Messages - Top 20	Top 20 acknowledged messages at the time of report generation.	

\**Session* and *transaction reports* derive from metrics collected for graphing policies (as well as Reporter reports). If you did not enable reports and graphs when you saved your configuration file (answering [yes] to the prompt), to generate these reports, run the *Enable Graphs* application against the managed node:

**Admin**→**Enable Graphs** [UNIX managed nodes];  
**Admin Windows**→**Enable Graphs** [Windows managed nodes]).

## Graphs

Graphs represent pictorial representation of the metrics. The following section provides information on Sybase-specific graphing metrics.

### Metrics for Graphing or Alarming or Both

Some metric data may be used strictly for graphing purposes. You can determine if the metric is a graphing-only metric by viewing the [Sybase Metric Summary](#), where you can find a column labeled **Graph**.

If this column contains an **A**, the metric generates a message whenever the metric value exceeds a threshold (alarm condition). If this column contains a **G**, the metrics logs the data to generate graphs.

## Using Metrics for Graphing Only

You can avoid alarms or messages if you need the data only for graphing. To prevent alarms or messages from being generated, set the measurement threshold policy threshold for the metric to an extreme value (0 for Minimum metrics and 100 or higher for Maximum metrics).

### Generic Datasource Graphing Metrics

The graphing data is stored in the DB SPI generic datasources. The following table lists the graphs and related metrics available in the Sybase SPI. For metric definitions see, [Chapter 1, Sybase Metrics](#).

**Datasource name:** DBSPI\_SYB\_GRAPH

**Specification file to create the data source:** dbspisybg.sp

**Database Instance name:** <name of the database instance>

**Table 3** Graphs for Sybase Metrics

Graph Name	Metric Number
Cache	S031, S032, S033, S035, S036
Disk Utilization	S016, S018, S029
Parallel Server and Query	S064, S065, S066, S067, S068, S069
Memory Statistics	S037, S038, S039, S073, S074, S075, S076, S080, S081
Disk Index	S070, S071, S072
CPU Utilization	S001, S003
Process and Application Changes	S046, S047, S048, S050, S051
Database Status	S004, S007, S008, S009, S010
CheckPoints	S021, S063
Server Status	S027, S053, S054, S055, S057, S061, S062
Network Packets	S041, S042, S04, S045

### Generic Datasource Format

The generic datasource reserves a column for the database instance name, labeled INSTANCENAME. This column, then, contains the information that differentiates the data collected for each instance. Other columns represent the graphing metrics.

The following table is a sample of the Datasource Table. The complete list of all the graphing metrics is stored in the dbspisybg.fm file located at:

**For Windows:** <ovagentdir>\bin\instrumentation.

**For HP-UX, Linux, and Solaris:** /var/opt/OV/bin/instrumentation

**Table 4    Format of Generic Datasource**

<b>INSTANCE NAME</b>	<b>S001_UtilBy CPUPct</b>	<b>S003_ContxtS witchPct</b>	<b>S004_TransLo gFullPct</b>	<b>...</b>
<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>
<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>	<i>&lt;value&gt;</i>

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