

HP Operations Smart Plug-in for Informix

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

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Reference Guide

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1 Informix Metrics

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

Inside Informix Policies

DB SPI measurement threshold policies are designed to be efficient and easy to use. In fact, you may use most of the policies without making any modifications whatsoever. This document provides the detailed information you will need if you decide to customize any of the policies.

For easy reference, this information has been provided in the following table in summary form. The tables that follow provide highly detailed information for each of the Informix metrics.

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.

Column Heading	Column content
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."

Informix Metric Summary

Informix Metric	Description	Area	Interval	Min/Max	Threshold	Reset	Severity	A or G	Rpt Access	Graph
I001_ProcessStatus	Number of "oninit" processes running.	Status	5m	Min	0.5	Cont	Critical	A & G	Opt & Tool	Status
I002_InstanceStatus	Instance is not in online or read-only mode	Status	5m	Max	1.5 2.5 3.5 4.5 5.5 6.5 7.5	Cont	Major Major Major Critical Critical Critical Critical	A & G	Auto, Tool & Opt	Status
I003_Accessible	Sysmaster database is not accessible	Status	5m	Max	0.5	Cont	Critical	A & G	Auto, Tool & Opt	Status
I005_UserLogonCnt	# of users with sessions open	Status	15m	Max	100	W/O	Warning	A & G	Auto, Tool & Opt	Sessions
I007_NumSessions	Number of sessions open	Status	15m	Max	500	W/O	Warning	A & G	Auto, Tool & Opt	Sessions
I015_PLogPgFrPct	% of free pages to total pages in physical log	Space	5m	Min	10%	15%	Major	A & G	Auto, Tool & Opt	LLogFr ChkPtLogs
I017_DbsPgFrMinPct	% dbspaces pages free	Space	5m	Min	5% 25%	10% 30%	Major Warning	A	Auto & Tool	
I217_DbsPgFrPct	% dbspaces pages free - drill-down	Space	5m	Min	5% 25%	10% 30%	Major Warning	A	Opt	

Informix Metric	Description	Area	Interval	Min/Max	Threshold	Reset	Severity	A or G	Rpt Access	Graph
I219_BbsPgFrPct	% of blobspaces pages free	Space	5m	Min	5% 25%	10% 30%	Major Warning	A	Auto & Opt	
I019_BbsPgFrMinPct	% of blobspaces pages free	Space	5m	Min	5% 25%	10% 30%	Major Warning	A	Auto & Opt	
I020_ChunkDown	Chunks down	Space	5m	Max	0.5	W/O	Critical	A	Auto & Tool	
I022_TblExtentsMax	# of extents too high for one or more table	Space	Daily	Max	120 200	W/O	Warning Major	A	Opt & Tool	
I024_TblCantExtend	Not enough space for a table to get a full next extent	Space	Daily	Max	0.5	W/O	Critical	A	Opt & Tool	
I031_ShmTot	Size of total shared memory	I/O	15m	Max	256K 512K	W/O	Warning Minor	A & G	Auto, Tool & Opt	ShmTot
I032_ShmVirtSegs	Number of virtual shared memory segments	I/O	5m	Max	4 10	W/O	Warning Major	A & G	Auto, Tool & Opt	ShMem
I033_ShmUsedPct	% of allocated shared memory used.	I/O	5m	Max	90%	W/O	Warning	A & G	Auto, Tool & Opt	ShMem
I036_ShmDataBufMdPct	% data buffers modified	I/O	5m	Max	93% 99%	W/O	Warning Minor	A & G	Auto & Tool	

Informix Metric	Description	Area	Interval	Min/Max	Threshold	Reset	Severity	A or G	Rpt Access	Graph
I037_TotReadCacHtPct	% of cached reads to total reads	I/O	5m	Min	80%	W/O	Warning	A & G	Auto, Tool & Opt	ShMem
I038_TotWritCacHtPct	% of cached writes to total writes	I/O	5m					G	Tool	ShMem
I039_CurReadCacHtPct	% of cached reads to total reads for current interval	I/O	5m	Min	80% for 16 min	W/O	Warning	A & G	Auto, Tool & Opt	ShMem
I040_CurWritCacHtPct	% of cached writes to total writes for current interval	I/O	5m					G	Tool	ShMem
I041_FgWritesRate	Foreground writes per hour	I/O	1h	Max	3/hr	W/O	Minor	A	Auto, Tool & Opt	
I042_FgWrites	Foreground writes this interval	I/O	1 hr					G	Tool	Writes
I043_LRUWrites	LRU writes this interval	I/O	1 hr					G	Tool	Writes
I044_ChunkWrites	Chunk writes this interval	I/O	1 hr					G	Tool	Writes
I047_SeqScansRate	Sequential scans per minute	I/O	5m	Max	100	W/O	Warning	A & G	Auto, Tool & Opt	SortScan

Informix Metric	Description	Area	Interval	Min/Max	Threshold	Reset	Severity	A or G	Rpt Access	Graph
I050_SortDiskRate	Disk sort rate	I/O	1h	Max	10/hr	Cont	Minor	A & G	Auto & Tool	SortScan
I051_SortTotalRate	Total sort rate	I/O	1h	Max	100/m	W/O	Minor	A & G	Auto, Tool & Opt	SortScan
I052_TotSortMemryPct	% of sorts in memory since instance profile reset	I/O	1h	Min	85% 95%	90% 98%	Minor Warning	A & G	Auto, Tool & Opt	SortScan
I053_CurSortMemryPct	% of sorts in memory this interval	I/O	1h	Min	85% 95%	90% 98%	Minor Warning	A & G	Auto, Tool & Opt	SortScan
I054_SortMaxSpace	Maximum space used by a sort	Sort	1h	Max	99999	W/O	Minor	A & G	Auto, Tool & Opt	SortSpace
I056_TxnThroughput	Transactions per minute	Transactions	5m					G	Tool	Txns
I057_CommitRate	Commits per minute	Transactions	5m					G	Tool	Txns
I058_RollbackRate	Rollbacks per minute	Transactions	5m					G	Tool	Txns
I059_TotRollbackPct	% of transactions rolled-back since profile reset	Transactions	1hr	Max	30%	W/O	Warning	A & G	Auto, Tool & Opt	Txns

Informix Metric	Description	Area	Interval	Min/Max	Threshold	Reset	Severity	A or G	Rpt Access	Graph
I060_CurRollbackPct	% of transactions rolled-back this interval	Transactions	15m	Max	30%	W/O	Warning	A & G	Auto, Tool & Opt	Txns
I061_SesLongTxnsMax	Maximum long transactions for a session (roll-up)	Transactions	5m	Max	0.5	W/O	Major	A	Auto & Tool	
I261_SesLongTxns	Long transactions by session (drill-down)	Transactions	15m	Max	0.5	W/O	Warning	A	Opt	
I064_LLogFr	Logical log pages free	Logging	5m	Min	500	750	Critical	A & G	Auto, Tool & Opt	LLogFr
I065_LLogFrPet	% of logical log space free to total logical log space	Logging	5m	Min	10% 25%	15% 35%	Critical Minor	A & G	Auto, Tool & Opt	LLogFr ChkPtLogs
I066_LLogNonBkUpPet	% of logical log pages used but not backed up to total number of logical log pages	Logging	5m	Max	60%	50%	Major	A & G	Auto, Tool & Opt	LLogFr ChkPtLogs
I069_CkptRate	Checkpoint completion rate	Logging	1h	Max	30/hr	W/O	Major	A & G	Auto, Tool & Opt	LLogFr ChkPtLogs

Informix Metric	Description	Area	Interval	Min/Max	Threshold	Reset	Severity	A or G	Rpt Access	Graph
I070_CkptDuration	Checkpoint duration	Logging	15m	Max	30	W/O	Major	A & G	Auto, Tool & Opt	LLogFr ChkPtLogs
I071_CkptWaitsRate	Checkpoint waits	Logging	15m	Max	5/min	W/O	Warning	A & G	Auto, Tool & Opt	LLogFr ChkPtLogs
I073_LockAvailPct	% of locks available to total number of locks	Locking	5m	Min	20% 40%	W/O W/O	Major Minor	A & G	Auto, Tool & Opt	Locks
I074_LockWtsReqPct	% of lock waits to locks requested	Locking	5m	Max	15%	W/O	Warning	A & G	Auto, Tool & Opt	Locks
I075_Deadlocks	Total deadlocks	Locking	5m	Max	0.5	W/O	Warning	A & G	Auto, Tool & Opt	Locks
I076_SessionBlkLock	# of sessions blocked waiting on a locked record or table	Locking	5m	Max	15	W/O	Warning	A & G	Auto, Tool & Opt	Locks

Metric Specification Description

Metric Number	The identification number assigned to the metric. All Informix metrics are in the range 1000 to 1999. 1001 to 1099 : Standard Server Metrics 1201 to 1299 : Drill Down Metrics
Name	The name assigned to the metric. All Informix metrics start with Ixxx, 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 IT/O threshold represent a Minimum or Maximum value?
Threshold	What is the default IT/O threshold (if any)? (*=Threshold value is really 0, but IT/O alarms occur at <= or >= values. Since a '0' value would trigger an alarm, the threshold is set to 0.5)
Reset (value)	What is the Reset (value) for this metric? (Without reset, With reset, Continuous)
Message Text	What messages may be displayed for each Condition
Instruction Text	Problem-solving information (Probable causes, Potential impact, Suggested actions, and Reports)
Report Type	What type of report is generated (if any)? (e.g. SQL, onstat, ps)
Report Location	If a report is available, how is it generated? (Operator, Automatic, 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 graphing only (no alarms) don't have an HPOM policy for Operator or Auto actions, so they are ONLY in the Tool Bank. N/A means that no report is planned.
Area	To what logical area (if any) does the metric belong? (Status, Space Management, I/O Performance Management, Transactions, Logical Logging, Locking)

Metric 1001_ProcessStatus

Metric Number	1001
Name	ProcessStatus
Severity	Critical
Description	Number of "oninit" processes running
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	0.5
Reset (value)	Continuous
Message Text	DBSPI-1001.1:Informix is down. No 'oninit' processes are running.
Instruction Text	<p>Probable cause(s): Informix is down. No 'oninit' processes are running. Instances were shut down; system unresponsive; network failure; hardware failure</p> <p>Potential impact: System down.</p> <p>Suggested action(s): Start-up database server instances.</p> <p>The operator action for this metric generates a report showing any 'oninit' processes.</p>
Report Type	ps -fu informix
Report Location	Operator initiated and tool bank.
Area	Status

Metric I002_InstanceStatus

Metric Number	1002
Name	InstanceStatus
Severity	Major Major Major Critical Critical Critical Critical
Description	Instance is not in online or read-only mode
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	Major: 1.5 Major: 2.5 Major: 3.5 Critical: 4.5 Critical: 5.5 Critical: 6.5 Critical: 7.5
Reset (value)	Continuous
Message Text	DBSPI-1002.1:<\$OPTION(dbserve)> is in <\$OPTION(mode)> mode.
Instruction Text	Probable cause(s): Informix server is not on-line or in read-only mode. Instance was shut down; system unresponsive; network failure; hardware failure Potential impact: System down. Suggested action(s): Switch to online mode; check network and hardware; initialize the instance The automatic and operator actions for this metric generate a report showing the instance status (onstat banner).
Report Type	onstat -
Report Location	Automatic, operator initiated, and tool bank.
Area	Status

Metric I003_Accessible

Metric Number	1003
Name	Accessible
Severity	Critical
Description	Sysmaster database is not accessible
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Continuous
Message Text	DBSPI-1003.1:Sysmaster database is not accessible.
Instruction Text	<p>Probable cause(s): Sysmaster database is not accessible. Corrupt sysmaster database; instance was shut down; system unresponsive; network failure; hardware failure</p> <p>Potential impact: System down.</p> <p>Suggested action(s): Check sysmaster database; switch to online mode; check network and hardware; initialize the instance.</p> <p>The automatic and operator actions for this metric attempt to connect to the instance and run a query. When the instance is accessible, the report will list the configuration parameter settings. When the instance is not accessible, error messages will appear in the report.</p>
Report Type	onstat -
Report Location	Automatic, operator initiated, and tool bank.
Area	Status

Metric I005_UserLogonCnt

Metric Number	1005
Name	UserLogonCnt
Severity	Warning
Description	# of users with sessions open

Metric Number	1005
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	100
Reset (value)	Without Reset
Message Text	# of users with sessions open (UserLogonCnt)
Instruction Text	<p>Probable cause(s): The number of users connected to the database server is higher than the HPOM set threshold. Too many users have sessions open.</p> <p>Potential impact: More licenses may be required.</p> <p>Suggested action(s): Check to make sure there aren't any idle sessions and check to make sure the number of users in the database do not exceed the number of licenses owned.</p> <p>The automatic action for this metric generates a report showing current session information.</p> <p>The operator action for the metric generates a 'sessions' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Status

Metric I007_NumSessions

Metric Number	1007
Name	NumSessions
Severity	Warning
Description	Number of sessions open
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	500
Reset (value)	Without Reset
Message Text	DBSPI-1007.1:# of sessions open <i>Metric_Value</i> too high >= <i>Threshold_Value</i> for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The number of sessions open for the database server is higher than the HPOM set threshold. Too many sessions open.</p> <p>Potential impact: Performance</p> <p>Suggested action(s): Check to make sure there aren't any idle sessions and check to make sure the number of users in the database do not exceed the number of licenses owned.</p> <p>The automatic action for this metric generates a report showing current session information.</p> <p>The operator action for the metric generates a 'sessions' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Status



For this metric, the ASCII reports are not applicable to Informix XPS.

Metric I015_PLogPgFrPct

Metric Number	1015
Name	PLogPgFrPct
Severity	Major
Description	% of free pages to total pages in physical log
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	10%
Reset (value)	With Reset 15%
Message Text	DBSPI-1015.1:Free pages percentage <i>Metric_Value</i> too low <= <i>Threshold_Value</i> % for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The percentage of free pages to total pages in physical log is lower than the HPOM set threshold. Not enough space allocated for the physical log.</p> <p>Potential impact: Instance shutdown.</p> <p>Suggested action(s): Increase the size of the physical log and reinitialize the instance; configure the instance according to the sizing guidelines for the physical log and the logical log files in the Informix manuals.</p> <p>The automatic action for this metric generates a report showing logging information.</p> <p>The operator action for the metric generates a PerfView graph showing logging and checkpoint statistics over time.</p>
Report Type	onstat -l
Report Location	Automatic, operator initiated, and tool bank.
Area	Space Management

Metric 1017_DbsPgFrMinPct

Metric Number	1017
Name	DbsPgFrMinPct
Severity	Major Warning
Description	% dbspaces pages free
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	Major: 5% Warning: 25%
Reset (value)	Major: With reset 10% Warning: With reset 30%
Message Text	DBSPI-1017.1:Free pages percentage is too low (\\<=<\$THRESHOLD>%) for one or more dbspaces for <\$OPTION(dbserve)>, most serious is <\$OPTION(dbSPACE)> at <\$VALUE>%."
Instruction Text	Probable cause(s): One or more dbspaces have less than the percent pages free specified in the HPOM set threshold. Not enough space allocated for the dbSPACE. Potential impact: Full dbSPACE. Suggested action(s): Allocate another chunk for the dbSPACE. Look at the 'Annotations' report output for additional information about this and other dbspaces. The automatic action for this metric generates a report showing dbSPACE information.
Report Type	SQL
Report Location	Automatic and tool bank.
Area	Space Management

Metric I217_DbsPgFrPct

Metric Number	1217
Name	DbsPgFrPct
Severity	Major Warning
Description	Drill down data for % dbspaces pages free
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	Major: 5% Warning: 25%
Reset (value)	Major: With reset 10% Warning: With reset 30%
Message Text	DBSPI-1217.1:Percentage of free pages (<\$VALUE>%) is too low (\\<=<\$THRESHOLD>%) for dbspace <\$OPTION(dbSPACE)> for <\$OPTION(dbSERV)>.
Instruction Text	Probable cause(s): A specific dbspaces has less than the percent pages free specified in the HPOM set threshold. Not enough space allocated for the dbspace. Potential impact: Full dbspace. Suggested action(s): Allocate another chunk for the dbspace. Look at the 'Annotations' report output for additional information about this and other dbspaces." The operator action for this metric generates a report showing dbspace information.
Report Type	SQL
Report Location	Operator initiated
Area	Space Management

Metric I019_BbsPgFrMinPct

Metric Number	1019
Name	BbsPgFrMinPct
Severity	I019.1: Major I019.2: Warning
Description	Percentage blobspaces pages free
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	Major: 5% Warning: 25%
Reset (value)	Major: 10% Warning: 30%
Message Text	DBSPI-1019.1: Free pages percentage is too low (\\<=<\$THRESHOLD>%) for one or more blobspaces for <\$OPTION(dbserve)>, most serious is <\$OPTION(blobspace)> at <\$VALUE>%.
Instruction Text	<p>Probable cause(s): One or more blobspaces have less than the percent pages free specified in the HPOM set threshold. Not enough space allocated for the blobspace.</p> <p>Potential impact: Full blobspace.</p> <p>Suggested action(s): Allocate another chunk for the blobspace. Look at the 'Annotations' report output for additional information about this and other blobspaces.</p> <p>The automatic action for this metric generates a report showing blobspace information.</p>
Report Type	SQL
Report Location	Automatic and operator initiated.
Area	Space Management



For this metric, the ASCII reports are not applicable to Informix XPS.

Metric I219_BbsPgFrPct

Metric Number	1219
Name	BbsPgFrPct
Severity	Major Warning
Description	Percentage blobspaces pages free - Drill-down
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	5% 25%
Reset (value)	10% 30%
Message Text	DBSPI-1219.1: Percentage of free pages (<\$VALUE>%) is too low (\\<=<\$THRESHOLD>%) for blobspace <\$OPTION(blobspace)> for <\$OPTION(dbserv)>.
Instruction Text	<p>Probable cause(s): A specific blobspaces has less than the percent pages free specified in the HPOM set threshold. Not enough space allocated for the blobspace.</p> <p>Potential impact: Full blobspace.</p> <p>Suggested action(s): Allocate another chunk for the blobspace. Run the operator action and look at the 'Annotations' report output for additional information about this and other blobspaces.</p> <p>The operator action for this metric generates a report showing blobspace information.</p>
Report Type	SQL
Report Location	Automatic and operator initiated.
Area	Space Managment

Metric 1020_ChunkDown

Metric Number	1020
Name	ChunkDown
Severity	Critical
Description	Chunks down
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-1020.1:<\$VALUE> chunks down.
Instruction Text	<p>Probable cause(s): The there are one or more chunks down in the database server. Hardware failure; network failure.</p> <p>Potential impact: Inaccessible tables; incomplete/inaccurate queries.</p> <p>Suggested action(s): Bring chunk back online.</p> <p>The automatic action for this metric generates a report showing chunk information.</p>
Report Type	SQL
Report Location	Automatic and tool bank.
Area	Space Managment

Metric 1022_TblExtentsMax

Metric Number	1022
Name	TblExtentsMax
Severity	Warning Major
Description	# of extents too high for one or more table
Alarming and/or Graphing metric	Alarming only

Metric Number	1022
Collection Interval	Daily
Min/Max Threshold	Maximum
Threshold	Warning: 120 Major: 200
Reset (value)	Without reset
Message Text	DBSPI-1022.1:One or more tables have too many extents (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>. Most serious is <\$OPTION(owner)>:<\$OPTION(tabname)> with <\$VALUE> extents.
Instruction Text	Probable cause(s): There is one or more tables with number of extents higher than the HPOM set threshold. Next Extent size for table is not high enough. Potential impact: Too many extents for table; fragmented table. Suggested action(s): Alter Table to increase Next Extent size for table. The operator action for this metric generates a report showing table extents. WARNING - This report is very slow and will take a lot of system resources.
Report Type	SQL
Report Location	Operator initiated and tool bank.
Area	Space Management

Metric 1024_TblCantExtend

Metric Number	1024
Name	TblCantExtend
Severity	Critical
Description	Not enough space for a table to get a full next extent
Alarming and/or Graphing metric	Alarming only
Collection Interval	Daily
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-1024.1: <i>Metric_Value</i> tables cannot get a full next extent.
Instruction Text	<p>Probable cause(s): One or more tables cannot allocate a full next extent. Not enough space or next extent size is too high.</p> <p>Potential impact: Out of space.</p> <p>Suggested action(s): Allocate more space.</p> <p>The automatic action for this metric generates a report showing the list of tables that cannot get a full next extent.</p>
Report Type	SQL
Report Location	Operator initiated and tool bank.
Area	Space Management

Metric 1031_ShmTot

Metric Number	1031
Name	ShmTot
Severity	Warning Minor
Description	Size of total shared memory in KB

Metric Number	1031
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	Minor: 512 KB Warning: 256 KB
Reset (value)	Without reset
Message Text	DBSPI-1031.1:Size of total shared memory (<\$VALUE> KB) is too high (>=<\$THRESHOLD> KB) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The size of total shared memory exceeds the HPOM set threshold. Database server has dynamically allocated too much memory.</p> <p>Potential impact: Server performance.</p> <p>Suggested action(s): Change SHMTOTAL in the onconfig file to the total amount of memory to be used for the database server.</p> <p>The automatic action for this metric generates a report showing the size of total shared memory allocated for this instance.</p> <p>The operator action for the metric generates a PerfView graph showing shared memory size over time.</p>
Report Type	onstat -
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I032_ShmVirtSegs

Metric Number	1032
Name	ShmVirtSegs
Severity	Warning Major
Description	Number of virtual shared memory segments
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	Major: 10 Warning: 4
Reset (value)	Without reset
Message Text	DBSPI-1032.1:# of virtual shared memory segments (<\$VALUE>) too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	Probable cause(s): The number of virtual shared memory segments exceeds the HPOM set threshold. System memory requirements Potential impact: May affect other applications memory availability. Suggested action(s): Limit memory utilization using the MEMMAX configuration parameter. Warning!! If parameter is set to low, the system may become unstable.
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Perf Managment

Metric I033_ShmUsedPct

Metric Number	1033
Name	ShmUsedPct
Severity	Warning
Description	% of allocated shared memory used

Metric Number	1033
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	90%
Reset (value)	Without reset
Message Text	DBSPI-1033.1:% of allocated shared memory used. (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	Probable cause(s): The percentage of allocated shared memory used exceeds the HPOM set threshold. SHMVIRTSIZE may be too large. Potential impact: Decreased memory for other applications Suggested action(s): If less than 60% then free up memory by an onmode -F or decrease SHMVIRTSIZE.
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I036_ShmDataBufMdPct

Metric Number	1036
Name	ShmDataBufMdPct
Severity	Minor Warning
Description	% data buffers modified
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	Minor: 99% Warning: 93%
Reset (value)	Without reset
Message Text	DBSPI-1033.1:% of allocated shared memory used. (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	Potential impact: Probable cause(s): The percentage of data buffers modified exceeds the HPOM set threshold. The checkpoint interval may be too high Performance. Suggested action(s): Decrease the checkpoint interval. Decrease LRU_MIN_DIRTY and LRU_MAX_DIRTY configuration parameters.
Report Type	SQL
Report Location	Automatic and tool bank.
Area	I/O Performance Management

Metric I037_TotReadCacHtPct

Metric Number	1037
Name	TotReadCacHtPct
Severity	Warning
Description	% of cached reads to total reads

Metric Number	1037
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	80%
Reset (value)	Without reset
Message Text	DBSPI-1037.1:Total cached reads to total reads percentage (<\$VALUE>%) too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Total percentage of cached reads to total reads is lower than the HPOM set threshold. Not enough buffers or physical log space allocated.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Allocate more physical log space and more buffers to the instance.</p> <p>The automatic action for this metric generates a report showing a profile of activity.</p> <p>The operator action for the metric generates a PerfView graph showing shared-memory statistics over time.</p>
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I038_TotWritCacHtPct

Metric Number	1038
Name	TotWritCacHtPct
Severity	N/A
Description	% of cached writes to total writes
Alarming and/or Graphing metric	Graphing only
Collection Interval	5 min
Min/Max Threshold	N/A
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	onstat -p
Report Location	Tool Bank
Area	I/O Performance Management

Metric I039_CurReadCacHtPct

Metric Number	1039
Name	CurReadCacHtPct
Severity	Warning
Description	% of cached reads to total reads for current interval
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum

Metric Number	1039
Threshold	80% for 16 min
Reset (value)	Without reset
Message Text	DBSPI-1039.1:Cached reads to total reads percentage (<\$VALUE>%) for the current interval too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Percentage of cached reads to total reads for the current interval is lower than the HPOM set threshold. Not enough buffers or physical log space allocated.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Allocate more physical log space and more buffers to the instance.</p> <p>The automatic action for this metric generates a report showing a profile of activity.</p> <p>The operator action for the metric generates a PerfView graph showing shared-memory statistics over time.</p>
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I040_CurWritCacHtPct

Metric Number	1040
Name	CurWritCacHtPct
Severity	N/A
Description	% of cached writes to total writes for current interval
Alarming and/or Graphing metric	Graphing only
Collection Interval	5 min
Min/Max Threshold	N/A
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	onstat -p
Report Location	Tool Bank
Area	I/O Performance Management

Metric I041_FgWritesRate

Metric Number	1041
Name	FgWritesRate
Severity	Minor
Description	Foreground writes per hour
Alarming and/or Graphing metric	Alarming only
Collection Interval	1 hour
Min/Max Threshold	Maximum

Metric Number	1041
Threshold	3.0
Reset (value)	Without reset
Message Text	DBSPI-1041.1:# of foreground writes per hour (<\$VALUE>) is too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>."
Instruction Text	<p>Probable cause(s): Number of foreground writes per hour exceeds the HPOM set threshold. Cleaners, LRU min/max dirty not set up properly. Potential impact: Performance.</p> <p>Suggested action(s): Follow the guidelines in the manual (for those parameters in particular) to ensure efficient flushing.</p> <p>The automatic action for this metric generates a report showing write type statistics.</p> <p>The operator action for the metric generates a 'writes' PerfView graph.</p>
Report Type	onstat -F
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I042_FgWrites

Metric Number	1042
Name	FgWrites
Severity	N/A
Description	Foreground writes this interval
Alarming and/or Graphing metric	Graphing only
Collection Interval	1 hour
Min/Max Threshold	N/A
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	onstat -F
Report Location	Tool Bank
Area	I/O Performance Management

Metric I043_LRUWrites

Metric Number	1043
Name	LRUWrites
Severity	N/A
Description	LRU writes this interval
Alarming and/or Graphing metric	Graphing only
Collection Interval	1 hour
Min/Max Threshold	N/A

Metric Number	1043
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	onstat -F
Report Location	Tool Bank
Area	I/O Performance Management

Metric I044_ChunkWrites

Metric Number	1044
Name	ChunkWrites
Severity	N/A
Description	Chunk writes this interval
Alarming and/or Graphing metric	MeasureWare-only
Collection Interval	1 hour
Min/Max Threshold	N/A
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	onstat -F
Report Location	Tool Bank
Area	I/O Performance Management

Metric I047_SeqScansRate

Metric Number	1047
Name	SeqScansRate
Severity	Warning
Description	Sequential scans per minute
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum

Metric Number	1047
Threshold	100
Reset (value)	Without reset
Message Text	DBSPI-1047.1:# of sequential scans per minute (<\$VALUE>) too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>"
Instruction Text	<p>Probable cause(s): No usage of Index for the table or improper usage of index.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): You may need to think of adding indexes to the table or using program directives to force internal query optimizer choose indexes for accessing data in this table rather than sequential scans. If you already have indexes added, review them.</p>
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I050_SortDiskRate

Metric Number	1050
Name	SortDiskRate
Severity	Minor
Description	Disk sort rate per hour
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Maximum
Threshold	10
Reset (value)	Continuous
Message Text	DBSPI-1050.1:Disk sort rate (<\$VALUE>/hour) is too high for <\$OPTION(dbserve)> (>=<\$THRESHOLD>/hour).
Instruction Text	<p>Potential impact: Probable cause(s): Disk sort rate per hour exceeds the HPOM set threshold. Large sorts or insufficient shared memory allocation</p> <p>Database performance.</p> <p>Suggested action(s):</p> <p>Analyze queries that require sorts. If appropriate, create additional indexes to reduce the need for large sorts. Review the instance configuration parameters and environment variables to tune memory allocation (SHMTOTAL, DS_MAX_QUERIES, DS_TOTAL_MEMORY, PDQPRIORITY, and MAX_PDQPRIORITY).</p> <p>The automatic action for this metric generates a report showing disk sorts by session.</p> <p>The operator action for the metric generates a PerfView graph showing sort and scan statistics over time.</p>
Report Type	SQL
Report Location	Automatic and tool bank.
Area	I/O Performance Management

Metric I051_SortTotalRate

Metric Number	1051
Name	SortTotalRate
Severity	Minor
Description	Total sort rate per minute
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Maximum
Threshold	100
Reset (value)	Without reset
Message Text	DBSPI-1051.1:Total sort rate (<\$VALUE>/minute) too high for <\$OPTION (dbserve) > (>=<\$THRESHOLD>/minute) .
Instruction Text	<p>Probable cause(s): Total sort rate per minute exceeds the HPOM set threshold.</p> <p>Insufficient indexing.</p> <p>Potential impact: Database performance.</p> <p>Suggested action(s):</p> <p>Analyze queries that require sorts. If appropriate, create additional indexes to reduce the need for sorts.</p> <p>The automatic action for this metric generates a report showing total sorts by session.</p> <p>The operator action for the metric generates a PerfView graph showing sort and scan statistics over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I052_TotSortMemryPct

Metric Number	1052
Name	TotSortMemryPct
Severity	Minor Warning
Description	% of sorts in memory since instance profile reset
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Minimum
Threshold	Minor: 85% Warning: 95%
Reset (value)	Minor: With reset 90% Warning: With reset 98%
Message Text	DBSPI-1052.1:% sorts in memory since profile reset (<\$VALUE>%) too low for <\$OPTION(dbserve)> (\ \ <=<\$THRESHOLD>%).
Instruction Text	<p>Probable cause(s): Percent of sorts in memory since instance profile reset exceeds the HPOM set threshold.</p> <p>Large sorts or insufficient shared memory allocation.</p> <p>Potential impact: Database performance.</p> <p>Suggested action(s): Analyze queries that require sorts. If appropriate, create additional indexes to reduce the need for large sorts. Review the instance configuration parameters and environment variables to tune memory allocation (SHMTOTAL, DS_MAX_QUERIES, DS_TOTAL_MEMORY, PDQPRIORITY, and MAX_PDQPRIORITY).</p> <p>The automatic action for this metric generates a report showing sort in memory percent by session.</p> <p>The operator action for the metric generates a PerfView graph showing sort and scan statistics over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I053_CurSortMemryPct

Metric Number	1053
Name	CurSortMemryPct
Severity	Minor Warning
Description	% of sorts in memory this interval
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Minimum
Threshold	Minor: 85% Warning: 95%
Reset (value)	Minor: With reset 90% Warning: With reset 98%
Message Text	DBSPI-1053.1:% sorts in memory this interval (<\$VALUE>%) too low for <\$OPTION(dbserv)> (\ \ <=<\$THRESHOLD>%).
Instruction Text	<p>Probable cause(s): Percent of sorts in memory this interval exceeds the HPOM set threshold. Large sorts or insufficient shared memory allocation.</p> <p>Potential impact: Database performance.</p> <p>Suggested action(s): Analyze queries that require sorts. If appropriate, create additional indexes to reduce the need for large sorts. Review the instance configuration parameters and environment variables to tune memory allocation (SHMTOTAL, DS_MAX_QUERIES, DS_TOTAL_MEMORY, PDQPRIORITY, and MAX_PDQPRIORITY).</p> <p>The automatic action for this metric generates a report showing sort in memory percent by session.</p> <p>The operator action for the metric generates a PerfView graph showing sort and scan statistics over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	I/O Performance Management

Metric I054_SortMaxSpace

Metric Number	1054
Name	SortMaxSpace
Severity	Minor
Description	Maximum space used by a sort
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Maximum
Threshold	99,999
Reset (value)	Without reset
Message Text	DBSPI-1054.1:Maximum space used for a sort (<\$VALUE>) exceeds threshold (<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Maximum space used by a sort exceeds the HPOM set threshold. A large sort operation.</p> <p>Potential impact: System failure.</p> <p>Suggested action(s): Click on 'Annotations' to see a report of sessions active at the time of the event. Run the operator action to show the maximum sort space metric over time.</p> <p>Check the instance configuration to make sure that enough sort space is available to accommodate anticipated sorting needs (DBSPACETEMP). Analyze the queries that require large sorts. Adding indexes or re-ordering sort columns may reduce the need for sort space.</p> <p>If DBSPACETEMP is not configured, sort files may be written to /tmp, potentially filling-up the file system and interfering with system operation.</p> <p>The automatic action for this metric generates a report showing maximum sort space used by session.</p> <p>The operator action for the metric generates a PerfView graph showing maximum sort space over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Sort

Metric I056_TxnThroughput

Metric Number	1056
Name	TxnThroughput
Severity	N/A
Description	Transactions per minute
Alarming and/or Graphing metric	Graphing only
Collection Interval	5 min
Min/Max Threshold	N/A
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	SQL
Report Location	Tool Bank
Area	Transactions

Metric I057_CommitRate

Metric Number	1057
Name	CommitRate
Severity	N/A
Description	Commits per minute
Alarming and/or Graphing metric	Graphing only
Collection Interval	5 min
Min/Max Threshold	N/A

Metric Number	1057
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	SQL
Report Location	Tool Bank
Area	Transactions

Metric I058_RollbackRate

Metric Number	1058
Name	RollbackRate
Severity	N/A
Description	Rollbacks per minute
Alarming and/or Graphing metric	Graphing only
Collection Interval	5 min
Min/Max Threshold	N/A
Threshold	N/A
Reset (value)	N/A
Message Text	N/A
Instruction Text	N/A
Report Type	SQL
Report Location	Tool Bank
Area	Transactions

Metric I059_TotRollbackPct

Metric Number	1059
Name	TotRollbackPct
Severity	Warning
Description	% of transaction rolled-back since profile reset
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Maximum

Metric Number	1059
Threshold	30%
Reset (value)	Without reset
Message Text	DBSPI-1059:% of transactions rolled back since profile reset (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>
Instruction Text	<p>Probable cause(s): Percent of transactions rolled-back since profile reset has exceeded the HPOM set threshold.</p> <ol style="list-style-type: none"> 1. Application Logic. 2. One of the servers may be down during a distributed query. <p>Potential impact: Database performance.</p> <p>Suggested action(s): Check application. Check availability of all servers that are transaction participants.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Transactions

Metric I060_CurRollbackPct

Metric Number	1060
Name	CurRollbackPct
Severity	Warning
Description	% of transactions rolled-back this interval
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	30%
Reset (value)	Without reset
Message Text	DBSPI-1060:% of transactions rolled-back this interval(<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>
Instruction Text	<p>Probable cause(s): Percent of transactions rolled-back this interval has exceeded the HPOM set threshold</p> <ol style="list-style-type: none"> 1. Application Logic. 2. One of the servers may be down during a distributed query. <p>Potential impact: Database performance.</p> <p>Suggested action(s): Check application. Check availability of all servers that are transaction participants.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Transactions

Metric I061_SesLongTxnsMax

Metric Number	1061
Name	SesLongTxnsMax
Severity	Major
Description	Maximum long transactions for a session (roll-up)

Metric Number	1061
Alarming and/or Graphing metric	Alarming only
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-1061.1:One or more sessions with number of long transactions too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>. Most serious is session/user <\$OPTION(sid)>/<\$OPTION(username)> with (<\$VALUE>) long transactions.
Instruction Text	Probable cause(s): One or more sessions with number of long transactions higher than HPOM set threshold. Long transactions. Potential impact: Performance. Suggested action(s): Keep transactions concise; prepare transactions in advance. The automatic action for this metric generates a report showing long transactions.
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Transactions

Metric I261_SesLongTxns

Metric Number	1261
Name	SesLongTxns
Severity	Warning
Description	Drill down of long transactions by session
Alarming and/or Graphing metric	Alarming only
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-1261.1:# of long transactions (<\$VALUE>) too high (>=<\$THRESHOLD>) for session/user <\$OPTION(sid)>/<\$OPTION(username)> for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): A session has number of long transactions higher than HPOM set threshold. Long transactions.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Keep transactions concise; prepare transactions in advance.</p> <p>The operator action for this metric generates a report showing long transactions.</p>
Report Type	SQL
Report Location	Operator initiate
Area	Transactions

Metric I064_LLogFr

Metric Number	1064
Name	LLogFr
Severity	Critical
Description	Logical log pages free

Metric Number	1064
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	500
Reset (value)	With reset 750
Message Text	DBSPI-1064.1:# of logical log pages (<\$VALUE>) is too low (\\<=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The number of logical log pages for the Informix server is lower than the HPOM set threshold. Logical logs not backed up; Not enough logical log space allocated for the instance.</p> <p>Potential impact: Non-responsive instance.0</p> <p>Suggested action(s): Back up logical logs; increase logical log space allocated for the instance.</p> <p>The automatic action for this metric generates a report showing logical log statistics.</p> <p>The operator action for the metric generates a PerfView graph showing logical log free space over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Logical Logging

Metric I065_LLogFrPct

Metric Number	1065
Name	LLogFrPct
Severity	Critical Minor
Description	% of logical log space free to total logical log space
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	Critical: 10% Minor: 25%
Reset (value)	Critical: With rest 15% Minor: With reset 35%
Message Text	DBSPI-1065.1:Logical log space free percentage (<\$VALUE>%) too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Percentage of logical log space free for the Informix server is lower than the HPOM set threshold. Logical logs not backed up; Not enough logical log space allocated for the instance.</p> <p>Potential impact: Non-responsive instance.</p> <p>Suggested action(s): Back up logical logs; increase logical log space allocated for the instance.</p> <p>The automatic action for this metric generates a report showing logical log statistics.</p> <p>The operator action for the metric generates a PerfView graph showing logging and checkpoint statistics over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Logical Logging

Metric I066_LLogNonBkUpPct

Metric Number	1066
Name	LLogNonBkUpPct
Severity	Major
Description	% of logical log pages used but not backed up to total number of logical log pages
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	60%
Reset (value)	With reset 50%
Message Text	DBSPI-1066.1:Logical log pages used but not backed up percentage (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Percent of Logical log pages used but not backed for the Informix server is higher than the HPOM set threshold. Logical logs not backed up; Not enough logical log space allocated for the instance.</p> <p>Potential impact: Non-responsive instance.</p> <p>Suggested action(s): Back up logical logs; increase logical log space allocated for the instance.</p> <p>The automatic action for this metric generates a report showing logical log statistics.</p> <p>The operator action for the metric generates a PerfView graph showing logging and checkpoint statistics over time.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Logical Logging

Metric I069_CkptRate

Metric Number	1069
Name	CkptRate
Severity	Major
Description	Checkpoint completion rate
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	1 hour
Min/Max Threshold	Maximum
Threshold	30
Reset (value)	Without reset
Message Text	DBSPI-1069.1:Checkpoint completion rate (<\$VALUE>/hr) too high (>=<\$THRESHOLD>/hr) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The checkpoint completion rate for the Informix server exceeds the HPOM set threshold. Checkpoints occurring too frequently.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Follow the guidelines in the manual to ensure efficient checkpoints.</p> <p>The automatic action for this metric generates a report showing checkpoint completions.</p> <p>The operator action for the metric generates a PerfView graph showing logging and checkpoint statistics over time.</p>
Report Type	onstat -m...
Report Location	Automatic, operator initiated, and tool bank.
Area	Logical Logging

Metric I070_CkptDuration

Metric Number	1070
Name	CkptDuration
Severity	Major
Description	Checkpoint duration in seconds

Metric Number	1070
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	30
Reset (value)	Without reset
Message Text	DBSPI-1070.1:Checkpoint duration (<\$VALUE> secs) too high (>=<\$THRESHOLD> secs) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The checkpoint duration for the Informix server exceeds the HPOM set threshold. Buffers, checkpoint interval, cleaners, LRU min/max dirty, and/or physical log not set up properly.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Follow the guidelines in the manual (for those parameters in particular) to ensure efficient checkpoints.</p> <p>The automatic action for this metric generates a report showing checkpoint completions.</p> <p>The operator action for the metric generates a PerfView graph showing logging and checkpoint statistics over time.</p>
Report Type	onstat -m...
Report Location	Automatic, operator initiated, and tool bank.
Area	Logical Logging

Metric I071_CkptWaitsRate

Metric Number	1071
Name	CkptWaitsRate
Severity	Warning
Description	Rate of total checkpoint waits in minutes
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	15 min
Min/Max Threshold	Maximum
Threshold	5
Reset (value)	Without reset
Message Text	DBSPI-1071.1:Total checkpoint waits rate (<\$VALUE>/min) exceeds the threshold (<\$THRESHOLD>/min) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The rate of total checkpoint waits for the Informix server exceeds the HPOM set threshold. Checkpoints occurring too frequently or taking too long.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Follow the guidelines in the manual to ensure efficient checkpoints.</p> <p>The automatic action for this metric generates a report showing a profile of activity.</p> <p>The operator action for the metric generates a PerfView graph showing logging and checkpoint statistics over time.</p>
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	Logical Logging

Metric 1073_LockAvailPct

Metric Number	1073
Name	LockAvailPct
Severity	Major Minor
Description	% of locks available to total number of locks
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Minimum
Threshold	Major: 20% Minor: 40%
Reset (value)	Without reset
Message Text	DBSPI-1073.1:Locks available percentage (<\$VALUE>%) too low (\\<=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The Percentage of locks available to total number of locks has exceeded the HPOM set threshold. Not enough locks allocated for the instance.</p> <p>Potential impact: Performance (sessions might have to wait on locks).</p> <p>Suggested action(s): Increase the number of locks allocated for the instance.</p> <p>The automatic action for this metric generates a report showing locks held by session.</p> <p>The operator action for the metric generates a 'locks' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Locking

Metric 1074_LockWtsReqPct

Metric Number	1074
Name	LockWtsReqPct
Severity	Warning
Description	% of lock waits to locks requested

Metric Number	1074
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	15%
Reset (value)	Without reset
Message Text	DBSPI-1074.1:Total lock waits to locks requested percentage (<\$VALUE>%) too high (>=<\$THRESHOLD>%) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Total lock waits to locks requested percentage is higher than the HPOM set threshold. Not enough locks allocated for the instance.</p> <p>Potential impact: Performance (sessions might have to wait on locks).</p> <p>Suggested action(s): Increase the number of locks allocated for the instance.</p> <p>The automatic action for this metric generates a report showing a profile of activity.</p> <p>The operator action for the metric generates a 'locks' PerfView graph.</p>
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	Locking

Metric 1075_Deadlocks

Metric Number	1075
Name	Deadlocks
Severity	Warning
Description	Total deadlocks
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	0.5
Reset (value)	Without reset
Message Text	DBSPI-1075.1:Total deadlocks (<\$VALUE>) too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): Total deadlocks higher than the HPOM set threshold. Long transactions without committing; hung transactions; too many transactions trying to access the same data.</p> <p>Potential impact: Performance.</p> <p>Suggested action(s): Keep transactions concise; schedule the tasks so that they do not all access the same data at the same time.</p> <p>The automatic action for this metric generates a report showing a profile of activity.</p> <p>The operator action for the metric generates a 'locks' PerfView graph.</p>
Report Type	onstat -p
Report Location	Automatic, operator initiated, and tool bank.
Area	Locking

Metric 1076_SessionBlkLock

Metric Number	1076
Name	SessionBlkLock
Severity	Warning
Description	Number of sessions blocked waiting on a locked record or table

Metric Number	1076
Alarming and/or Graphing metric	Alarming & Graphing
Collection Interval	5 min
Min/Max Threshold	Maximum
Threshold	15
Reset (value)	Without reset
Message Text	DBSPI-1076.1:# of sessions blocked waiting on a locked record or table (<\$VALUE>) too high (>=<\$THRESHOLD>) for <\$OPTION(dbserve)>.
Instruction Text	<p>Probable cause(s): The number of sessions blocked waiting on a locked record or table is higher than the HPOM set threshold. Too many sessions trying to access the same data (record or table).</p> <p>Potential impact: Lockwait timeouts; uncompleted transactions.</p> <p>Suggested action(s): Ensure that sessions accessing the high-demand data have lock mode set to wait long enough. Schedule the sessions so that they do not all access the same data at the same time.</p> <p>The automatic action for this metric generates a report showing blocked session information.</p> <p>The operator action for the metric generates a 'locks' PerfView graph.</p>
Report Type	SQL
Report Location	Automatic, operator initiated, and tool bank.
Area	Locking



For this metric, the ASCII reports are not applicable to Informix XPS.

Informix Logfile Policies

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

Aborting Long Transaction

Description	Aborting Long Transaction
Severity	Normal
Message Group	Inf_Perf
Help Text	Probable Cause: The transaction spans the log space specified by transaction high-watermark (LTXHWM), and the offending long transaction is rolling back. Suggested Action: No additional action is needed. The address of the transaction structure in shared memory is displayed as a hexadecimal value.

Affinitied VP to Physical Proc

Description	Affinitied VP to Physical Proc
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server successfully bound a CPU virtual processor to a physical processor. Suggested Action: None required.

Affinity not enabled for this server

Description	Affinity not enabled for this server
Severity	Warning
Message Group	Inf_Admin
Help Text	Probable Cause: You tried to bind your CPU virtual processors to physical processors, but the database server that you are running does not support process affinity. Suggested Action: Set AFF_NPROCS to zero, or remove the affinity setting from VPCLASS.

Assert Failed

Description	Assert Failed
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: This message indicates an internal error. Suggested Action: The af.uniqid file in the directory specified by the ONCONFIG parameter DUMPDIR contains a copy of the assertion-failure message that was sent to the message log, as well as the contents of the current, relevant structures and/or data buffers. The information included in this message is intended for Informix Technical Support. Contact Informix Technical Support.

Begin recreating indexes

Description	Begin recreating indexes deferred during recovery
Severity	Normal
Message Group	Inf_Perf
Help Text	Probable Cause: During recovery, indexes to be created are deferred until after recovery completes. This message indicates that the database server deferred re-creating indexes and that it is now creating the indexes. During the time that the database server re-creates the indexes, it locks the affected tables with a shared lock. Suggested Action: None required.

Beginning process of reverting to 5.0 disk structure

Description	Beginning process of reverting to 5.0 disk structure
Severity	Normal
Message Group	Inf_Perf
Help Text	Probable Cause: The database server started reverting your disk space to Version 5.0 format. Suggested Action: None required.

Building 'sysmaster' database requires pages of logical log

Description	Building 'sysmaster' database requires ~mm pages of logical log
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: You do not currently have the approximate amount of free log space necessary to complete a build of the sysmaster database. Suggested Action: Back up your logs.

Building 'sysmaster' database

Description	Building 'sysmaster' database
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server is building the sysmaster database. Suggested Action: None required.

Cannot Allocate Physical-log File

Description	Cannot Allocate Physical-log File
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The database server attempted to initialize shared memory with a physical-log size that exceeds the amount of contiguous space available in the dbspace (specified as PHYSDBS in ONCONFIG). Both quantities of space, wanted and available, are expressed as kilobytes. Suggested Action: You must either reduce the size of the physical log (specified as PHYSFILE in ONCONFIG) or change the location of the physical log to a dbspace that contains adequate contiguous space to accommodate the physical log.

Cannot change to mode

Description	Cannot change to mode
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>Some error during fast or full recovery has prevented the system from changing to on-line or quiescent mode.</p> <p>Suggested Action:</p> <p>See previous messages in the log file for information, or contact Informix Technical Support.</p>

Cannot Commit Partially Complete Transactions

Description	Cannot Commit Partially Complete Transactions
Severity	Warning
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>Transactions that drop tables or indexes do not perform the drop until a COMMIT statement is processed (with a few exceptions). In these cases, a beginning commit log record is written, followed by the usual commit log record.</p> <p>If the database server fails in between the two, the fast recovery process will attempt to complete the commit the next time that you initialize the database server. If this completion of the commit fails, the database server generates the preceding message.</p> <p>Suggested Action:</p> <p>Examine the logical log as described in Informix documentation Chapter 37, 'Interpreting Logical-Log Records' to determine if you need to take action.</p>

Cannot create a user defined VP class

Description	Cannot create a user defined VP class with 'SINGLE_CPU_VP' non-zero
Severity	Warning
Message Group	Inf_Admin
Help Text	Probable Cause: SINGLE_CPU_VP is set to nonzero, and onmode was used to create a user-defined VP class. Suggested Action: If user-defined VP classes are necessary, stop the database server, change SINGLE_CPU_VP to zero, and restart the database server.

Cannot Open Dbspace

Description	Cannot Open Dbspace
Severity	Warning
Message Group	Inf_Conf
Help Text	Probable Cause: The database server is unable to access the specified dbspace. This message indicates a problem opening the tblspace tblspace or corruption in the initial chunk of the dbspace. Suggested Action: Verify that the device or devices that make up the chunks of this dbspace are functioning properly and that you assigned them the correct operating-system permissions (rw-rw----). You might be required to perform a data restore.

Cannot Open Logical Log

Description	Cannot Open Logical Log
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause: The database server is unable to access the logical-log files. Because the database server cannot operate without access to the logical log, you must resolve this problem.</p> <p>Suggested Action: Verify that the chunk device where the logical-log files reside is functioning and has the correct operating-system permissions (rw-rw----).</p>

Cannot Open Mirror Chunk pathname

Description	Cannot Open Mirror Chunk pathname
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause: The database server cannot open the mirrored chunk of a mirrored pair. The chunk pathname and the operating-system error are returned.</p> <p>Suggested Action: See your operating-system documentation for more information about corrective actions.</p>

Cannot Open Primary Chunk pathname

Description	Open Primary Chunk pathname
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause: The primary chunk of a mirrored pair cannot be opened. The chunk pathname and the operating-system error are returned.</p> <p>Suggested Action: See your operating-system documentation for more information about corrective actions.</p>

Cannot Open Primary Chunk chunkname

Description	Cannot Open Primary Chunk chunkname
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The initial chunk of the dbspace cannot be opened. Suggested Action: Verify that the chunk device is running properly and has the correct operating-system permissions (rw-rw----).

Cannot Perform Checkpoint

Description	Cannot Perform Checkpoint, shut system down
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: A thread that is attempting to restore a mirrored chunk has requested a checkpoint, but the checkpoint cannot be performed. Suggested Action: Shut down the database server.

Cannot Restore to Checkpoint

Description	Cannot Restore to Checkpoint
Severity	Major
Message Group	Inf_Admin
Help Text	Probable Cause: The database server is unable to recover the physical log and thus unable to perform fast recovery. Suggested Action: If the database server does not come on-line, perform a data restore from dbspace backup.

Cannot Rollback Incomplete Transactions

Description	Cannot Rollback Incomplete Transactions
Severity	Minor
Message Group	Inf_Conf
Help Text	Probable Cause: Within the fast-recovery or data-restore procedure, the logical-log records are first rolled forward. Then, open transactions that have not committed are rolled back. An open transaction could fail during the rollback, leaving some of the modifications from the open transaction in place. This error does not prevent the database server from moving to quiescent or on-line mode, but it might indicate an inconsistent database. Suggested Action: Examine the logical log using the onlog utility to determine if any action is needed.

Cannot update pagezero

Description	Cannot update pagezero
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: A failure occurred while the database server was trying to rewrite a reserved page during the reversion process. Suggested Action: See previous messages in the log file for information, or call Informix Technical Support.

Can't affinity VP to phys proc

Description	Can't affinity VP to phys proc
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The database server supports process affinity, but the system call to bind the virtual processor to a physical processor failed. Suggested Action: See your operating-system documentation.

Checkpoint Completed

Description	Checkpoint Completed
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: A checkpoint completed successfully. Suggested Action: None required.

Checkpoint Page Write Error

Description	Checkpoint Page Write Error
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The database server detected an error in an attempt to write checkpoint information to disk. Suggested Action: Please contact Informix Technical Support for additional assistance in resolving this situation.

Checkpoint Record Not Found in Logical Log

Description	Checkpoint Record Not Found in Logical Log
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The logical log or the chunk that contains the logical log is corrupted. The database server cannot initialize. Suggested Action: Perform a data restore from dbspace backup.

Chunk number pathname -- Offline

Description	Chunk number pathname -- Offline
Severity	Major
Message Group	Inf_Admin
Help Text	Probable Cause: The indicated chunk in a mirrored pair has been marked with status D and taken off-line. The other chunk in the mirrored pair is operating successfully. Suggested Action: Take steps now to repair the chunk device and restore the chunk. The chunk number and chunk device pathname are displayed.

Chunk number pathname -- Online

Description	Chunk number pathname -- Online
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The indicated chunk in a mirrored pair has been recovered and is on-line (marked with status O). The chunk number and chunk device pathname are displayed. Suggested Action: None required.

Completed automatic conversion of system catalog indexes

Description	Completed automatic conversion of system catalog indexes
Severity	Warning
Message Group	Inf_Conf
Help Text	Probable Cause: The index-conversion process was completed success-fully from a Version 5.0 database. Suggested Action: Run UPDATE STATISTICS to convert other indexes automatically, or drop and re-create them manually.

Chunk pathname must have READ/WRITE permissions

Description	The chunk pathname must have READ/WRITE permissions for owner and group.
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The chunk pathname does not have the correct owner and group permissions. Suggested Action: Make sure that you assigned the correct permissions (-rw-rw---) to the device on which the chunk is located.

Chunk pathname must have ID set

Description	The chunk pathname must have owner-ID and group-ID set to informix.
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The chunk chunkname does not have the correct owner and group ID. Suggested Action: Make sure the device on which the chunk is located has the owner ID and group ID set to informix.

Chunk pathname will not fit

Description	The chunk pathname will not fit in the space specified
Severity	Major
Message Group	Inf_Admin
Help Text	Probable Cause: The chunk pathname will not fit in the space that you specified. Suggested Action: Choose a smaller size for the chunk, or free space where the chunk is to be created.

Current number of primary/mirror chunks exceeds the limit

Description	The current number of primary/mirror chunks, nn, exceeds the Version 5.0 limit
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: When you revert to Version 5.0, the number of chunks in existence must be within the Version 5.0 limit. Chunk number nn exceeds the Version 5.0 limit. This conflict will cancel the reversion process. Suggested Action: Meet the preceding Version 5.0 limit. Use onspaces or ON-Monitor to drop enough chunks to meet the Version 5.0 limit.

Completed recreating indexes

Description	Completed recreating indexes
Severity	Normal
Message Group	Inf_Conf
Help Text	Probable Cause: The database server finished recreating the deferred indexes. Suggested Action: None required.

Completed partnum conversion

Description	Completed partnum conversion
Severity	Normal
Message Group	Inf_Conf
Help Text	Probable Cause: The database server successfully completed the partnum conversion process from a Version 5.0 database. Suggested Action: None required.

Continuing Long Transaction

Description	Continuing Long Transaction (for COMMIT)
Severity	Normal
Message Group	Inf_Perf
Help Text	<p>Probable Cause: The logical log has filled beyond the long-transaction high-water mark (LTXHWM), but the offending long transaction is in the process of committing.</p> <p>In this case, the transaction is permitted to continue writing to the logical log and is not rolled back. The address of the transaction structure in shared memory is displayed as hexadecimal value tx 0xn.</p> <p>Suggested Action: None required.</p>

Converting indexes to 6.0 format

Description	Converting indexes to 6.0 format
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause: The database server started converting indexes to Version 6.0 format.</p> <p>Suggested Action: None required.</p>

Converting partnums to 6.0 format

Description	Converting partnums to 6.0 format
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause: The database server started converting partnums to Version 6.0 format.</p> <p>Suggested Action: None required.</p>

Could not disable priority aging

Description	Could not disable priority aging: errno = nn
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: While trying to disable priority aging for the CPU virtual processor, a UNIX system call failed. The system error number associated with the failure is returned. Suggested Action: See your operating system documentation.

Could not fork a virtual processor

Description	Could not fork a virtual processor: errno = nn
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The fork of a virtual processor failed. The database server returns the UNIX system error number associated with the failure. Suggested Action: See your operating-system documentation. Check your operating-system kernel for the maximum number of processes available per user and for the system.

Create_vp: cannot allocate memory

Description	Create_vp: cannot allocate memory
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The database server cannot allocate new shared memory. Suggested Action: The database-server administrator must make more shared memory available. This situation might require increasing SHMTOTAL or reconfiguring the operating system. This message is usually accompanied by other messages that give additional information.

Dataskip is OFF for all dbspaces

Description	Dataskip is OFF for all dbspaces
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Informational. Suggested Action: None required.

Dataskip is ON for all dbspaces

Description	Dataskip is ON for all dbspaces
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Informational. Suggested Action: None required.

Dataskip is ON/OFF for dbspaces

Description	Dataskip is ON/OFF for dbspaces
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Informational; DATASKIP is ON/OFF for the specified dbspaces. Suggested Action: None required.

Data replication failed

Description	Data replication failed
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: The High-Availability Data Replication (HDR) failed. Suggested Action: Fix the problem as described in the chapter Using High-Availability Data Replication in the IBM Informix Dynamic Server Administrator's Guide.

Data replication resynced

Description	Data replication resynced
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Primary/secondary server operational. The High-Availability Data Replication (HDR) is on. Suggested Action: None required.

DBSPACETEMP internal list not initialized

Description	DBSPACETEMP internal list not initialized, using default
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: An error occurred while initializing a user-specified DBSPACETEMP list. Typically this condition is due to a memory-allocation failure. Suggested Action: Check for accompanying error messages.

DBspace/BLOBspace is now mirrored

Description	DBspace/BLOBspace spacename is now mirrored
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: You successfully added mirroring to the indicated dbspace or blobspace. Suggested Action: None required.

DBspace/BLOBspace is no longer mirrored

Description	DBspace/BLOBspace spacename is no longer mirrored
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: You have ended mirroring for the indicated dbspace or blobspace. Suggested Action: None required.

Dbospace for Physical-log File not found

Description	Dbospace for Physical-log File not found
Severity	Minor
Message Group	Inf_Conf
Help Text	Probable Cause: The dbospace dbospace name specified by the PHYSDBS configuration parameter does not exist. As a consequence, the database server cannot complete initialization. Suggested Action: Use a dbospace known to exist.

Devname: write failed, file system is full

Description	Devname: write failed, file system is full.
Severity	Critical
Message Group	Inf_Admin
Help Text	Probable Cause: The file system devname being full causes write to fail. Suggested Action: Free some space in devname.

Dropping temporary tblspace

Description	Dropping temporary tblspace, recovering pages
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>During shared-memory initialization, the database server routinely searches for temporary tables that are left without proper cleanup or following an uncontrolled shutdown. If a temporary table is found, the database server drops the table and recovers the space. The database server located the specified temporary tblspace and dropped it. The value 0xn is the hexadecimal representation of the tblspace number.</p> <p>Suggested Action:</p> <p>None required.</p>

Dynamically allocated new shared memory segment

Description	Dynamically allocated new shared memory segment
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This status message informs you that the database server successfully allocated a new shared-memory segment of size nnnn.</p> <p>Suggested Action:</p> <p>None required.</p>

Dynamic Server Blocked

Description	Dynamic Server blocked.
Severity	Critical
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This indicates that the following command was performed:</p> <pre>onmode -c block</pre> <p>This is sometimes performed to 'freeze' updates on Informix while a volume split or some other similar operation is being performed on the database.</p> <p>If the message 'Dynamic Server unblocked.' does not show up in the logfile (and therefore in the HPOM message browser) in a short amount of time, then something has gone wrong. If the database is not unblocked soon via the 'onmode -c unblock' command, the database will remain blocked for any update activity.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p>

Dynamic Server Unblocked

Description	Dynamic Server unblocked.
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This indicates that the following command was performed:</p> <pre>onmode -c unblock</pre> <p>This message indicates that Informix is now unblocked and can continue normally. This message should closely follow behind a 'Dynamic Server blocked' message.</p> <p>The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</p>

Error building sysmaster database

Description	Error building sysmaster database
Severity	Critical
Message Group	Inf_Admin
Help Text	<p>Probable Cause: The database server does not permit a thread to own locks that might have to wait while that thread is within a critical section. Any such lock request is denied, and an ISAM error message is returned to the user.</p> <p>Suggested Action: The error reported is an internal error. Contact Informix Technical Support.</p>

ERROR: NO 'waitfor' locks in Critical Section

Description	ERROR: NO 'waitfor' locks in Critical Section
Severity	Critical
Message Group	Inf_Admin
Help Text	Probable Cause: Errors were encountered in building the sysmaster database. The file outfile contains the result of running the script buildsmi. Suggested Action: See the file outfile.

Error writing pathname

Description	Error writing pathname
Severity	Critical
Message Group	Inf_Admin
Help Text	Probable Cause: Cannot write to pathname. The number nn is the number of the UNIX error returned. Suggested Action: Investigate the cause of the UNIX error. Usually it means that no space is available for the file. It might also mean that the directory does not exist or that no write permissions exist.

Error writing shmем to file filename

Description	Error writing shmем to file
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The database server detected an error in an attempt to write shared memory to filename. The first message is followed by one of the next two. Either the attempt failed because the output file could not be created or because the contents of shared memory could not be written. The error refers to the UNIX operating-system error that prompted the attempted write of shared memory to a file. The value of nn is the operating-system error. Suggested Action: See your operating-system documentation.

Existing sysmaster database renamed

Description	Existing sysmaster database renamed to sysmaster_pre60
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: When the database server was building the sysmaster database, it found that a database with the name of sysmaster already exists. The database server renamed the database sysmaster_pre60. Suggested Action: None required.

Fatal error initializing CWD string

Description	Fatal error initializing CWD string
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: Group groupname does not have execute permission for the current working directory. Suggested Action: Check permissions on the current working directory. You or the system administrator must give your group execute permission on the current working directory. Retry the operation that generated this message, after your group has been given permission.

Fragments of table set to non-resident

Description	Fragments dbspacename1 dbspacename2 of table tablename set to non-resident
Severity	Normal
Message Group	Inf_Conf
Help Text	Probable Cause: The specified fragments of tablename either have been set to nonresident by the SET TABLE command. Suggested Action: None required.

Forced-resident shared memory not available

Description	Forced-resident shared memory not available
Severity	Warning
Message Group	Inf_Conf
Help Text	Probable Cause: The database server port for your computer does not support forced-resident shared memory. Suggested Action: None required.

Freed mm shared-memory segment(s)

Description	Freed mm shared-memory segment(s)
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server sends this message to the message log after you run the -F option of the onmode utility to free unused memory. The message informs you of the number of segments and bytes that the database server successfully freed. Suggested Action: None required.

gcore pid; mv core.pid dir/core.pid.ABORT

Description	gcore pid; mv core.pid dir/core.pid.ABORT
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: This status message during a database server failure provides the name and place of each core file associated with the virtual processors. Suggested Action: None required.

I/O function chunk, pagenum, pagecnt --> errno

Description	I/O function chunk mm, pagenum nn, pagecnt aa --> errno = bb
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>An operating-system error occurred during an attempt to access data from disk space. The operating-system function that failed is defined by function.</p> <p>The chunk number and physical address of the page where the error occurred are displayed as integers. The pagecnt value refers to the number of pages that the thread was attempting to read or write. If an errno value is displayed, it is the number of the operating-system error and might explain the failure. If function is specified as bad request, some unexpected event caused the I/O attempt on an invalid chunk or page.</p> <p>Suggested Action:</p> <p>If the chunk status changes to D, or down, restore the chunk from its mirror, or repair the chunk. Otherwise, perform a data restore.</p>

I/O error, primary/mirror Chunk pathname -- Offline (sanity)

Description	I/O error, primary/mirror Chunk pathname -- Offline (sanity)
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>The database server detected an I/O error on a primary or mirrored chunk with pathname. The chunk was taken off-line.</p> <p>Suggested Action:</p> <p>Check that the device on which the chunk was stored is functioning as intended.</p>

Indexes set to non-resident

Description	Indexes idx1 and idx2 set to non-resident
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The specified indexes have been set to nonresident through the SET TABLE statement. Suggested Action: None required.

Informix Dynamic Server Initialized - Complete Disk Initialized

Description	Informix Dynamic Server Initialized - Complete Disk Initialized
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Disk space and shared memory have been initialized. Any databases that existed on the disk before the initialization are now inaccessible. Suggested Action: None required.

Informix Dynamic Server Initialized - Shared Memory Initialized

Description	Informix Dynamic Server Initialized - Shared Memory Initialized
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Shared memory has been initialized. Suggested Action: None required.

Informix Dynamic Server Stopped

Description	Informix Dynamic Server Stopped
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server has moved from quiescent mode to off-line mode. The database server is off-line. Suggested Action: None required.

Internal overflow of shmids

Description	Internal overflow of shmids, increase system max shared memory segment size
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: The database server was initializing shared memory when it ran out of internal storage for the shmids associated with this segment. Suggested Action: Increase the value of your maximum kernel shared-memory segment size, usually SHMMAX. See your operating-system documentation for more information.

Lock table overflow

Description	Lock table overflow
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: A thread attempted to acquire a lock when no locks were available. The user ID and session ID are displayed. Suggested Action: Increase the LOCKS configuration parameter, and initialize shared memory.

Logical-log File not found

Description	Logical-log File not found
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The checkpoint record in the root dbspace reserved page is corrupted. Suggested Action: Perform a data restore from dbspace backup.

Logical Log nn Complete

Description	Logical Log nn Complete
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The logical-log file identified by log-ID number nn is full. The database server automatically switches to the next logical-log file in the sequence. Suggested Action: None required.

Logical logging error

Description	Logical logging error for type:subtype in (????)
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>Logging failure. The log record that caused the error is identified as follows:</p> <p>type is the logical-log record type</p> <p>subtype is the logging subsystem (OLDRSAM, RSAM)</p> <p>???? is the name of an internal function that indicates which system failed to log</p> <p>Suggested Action:</p> <p>Contact Informix Technical Support.</p>

Log Record

Description	Log Record: log = ll, pos = 0xn, type = type:subtype(snum), trans = xx
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>The database server detected an error during the rollforward portion of fast recovery or logical-log restore. The log record that caused the error is identified as follows:</p> <p>ll is the logical-log log ID where the record is stored</p> <p>0xn is the hexadecimal address position within the log</p> <p>type is the logical-log record type</p> <p>subtype is the logging subsystem (OLDRSAM, RSAM)</p> <p>snum is the subsystem number</p> <p>xx is the transaction number that appears in the logical log</p> <p>Suggested Action:</p> <p>Contact Informix Technical Support.</p>

Log record not undone

Description	Log record (type:subtype) at log nn, 0xn was not undone
Severity	Major
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>A log undo failed because a log is corrupt. The log record that caused the error is identified as follows:</p> <p>type is the logical-log record type</p> <p>subtype is the logging subsystem (OLDRSAM, RSAM)</p> <p>nn is the logical-log log ID where the record is stored</p> <p>0xn is the hexadecimal address position within the log</p> <p>Suggested Action:</p> <p>Examine the logical log using the onlog utility to determine if any action is needed. Contact Informix Technical Support.</p>

Log record failed

Description	Log record (type:subtype) failed, partnum pnum row rid iserrno num
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>A logging failure occurred. The log record that caused the error is identified as follows:</p> <p>type is the logical-log record type</p> <p>subtype is the logging subsystem (OLDRSAM, RSAM)</p> <p>pnum is the part number</p> <p>rid is the row id</p> <p>num is the iserror number</p> <p>Suggested Action:</p> <p>Contact Informix Technical Support.</p>

Log record was not rolled back

Description	Log record (type:subtype) in log nn, offset 0xn was not rolled back
Severity	Minor
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>A log undo failed because a log is corrupt. The log record that caused the error is identified as follows:</p> <p>type is the logical-log record type.</p> <p>subtype is the logging subsystem (OLDRSAM, RSAM).</p> <p>log is the logical-log log ID where the record is stored.</p> <p>offset is the hexadecimal address position within the log.</p> <p>Suggested Action:</p> <p>Examine the logical log using the onlog utility to determine if any action is needed. Contact Informix Technical Support.</p>

Logical Recovery allocating worker threads

Description	Logical Recovery allocating nn worker threads thread_type
Severity	Normal
Message Group	Inf_Conf
Help Text	<p>Probable Cause:</p> <p>The database server determined the number of worker threads that will be used for parallel recovery. The variable thread_type can assume the values ON_RECVRY_THREADS or OFF_RECVRY_THREADS.</p> <p>Suggested Action:</p> <p>This message is a status message. No action is required. If you want a different number of worker threads allocated for parallel recovery, change the value of the ONCONFIG configuration parameter ON_RECVRY_THREADS or OFF_RECVRY_THREADS.</p>

Logical Recovery Started

Description	Logical Recovery Started
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Informational. Suggested Action: None required.

Memory allocation error

Description	Memory allocation error
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: This error could be caused by either not enough main (OS) memory or not enough internal (database server) memory. Suggested Action: See your operating-system documentation for information on how to increase OS memory. Alternatively, increase the virtual-memory size (SHMVIRTSIZE), the size of the added segments, (SHMADD) or your total shared-memory size (SHMTOTAL).

Mirror Chunk added to space spacename

Description	Mirror Chunk chunkname added to space spacename. Perform manual recovery.
Severity	Minor
Message Group	Inf_Admin
Help Text	<p>Probable Cause: Fast recovery, full recovery, or an HDR secondary has recovered the add of a mirror chunk. It does not perform automatic mirror recovery, however. The administrator must do this.</p> <p>Suggested Action: Attempt to recover the mirror chunks using either the onspaces utility or ON-Monitor.</p>

Mixed transaction result

Description	Mixed transaction result. (pid=nn user=userid)
Severity	Major
Message Group	Inf_Fault
Help Text	<p>Probable Cause: You receive this message only when more than one database server is involved in a transaction. This message indicates that a database server, after preparing a transaction for commit, heuristically rolled back the transaction, and the global transaction completed inconsistently. The pid value is the user-process identification number of the coordinator process. The value of user is the user ID associated with the coordinator process.</p> <p>Suggested Action: See Informix documentation Chapter 31, "Recovering Manually from Failed Two-Phase Commit".</p>

mt_shm_free_pool: pool has blocks still used

Description	mt_shm_free_pool: pool 0xn has blocks still used (id nn)
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: An internal error occurred during a pool de-allocation because blocks are still associated with the pool. Suggested Action: Contact Informix Technical Support.

mt_shm_init: can't create resident/virtual segment

Description	mt_shm_init: can't create resident/virtual segment
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The causes for the failure to create the resident or virtual segment are as follows: <ol style="list-style-type: none">(1) the segment size is less than the minimum segment size;(2) the segment size is larger than the maximum segment size;(3) allocating another segment would exceed the allowable total shared-memory size; or(4) a failure occurred while trying to allocate the segment. Suggested Action: If you suspect that this error was generated because of item 1 or 2 in the preceding paragraph, contact Informix Technical Support. To correct item 3, increase the SHMTOTAL value in your ONCONFIG configuration file. See your logical-log file for additional information about errors generated because of item 4.

mt_shm_remove: WARNING: may not have removed all/correct segments

Description	mt_shm_remove: WARNING: may not have removed all/correct segments
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>While removing the shared-memory segments associated with the database server, the last segment removed does not equal the last segment registered internally. This situation is probably due to the unexpected failure of the database server.</p> <p>Suggested Action:</p> <p>Remove any segments that were not cleaned up.</p>

Not enough main memory

Description	Not enough main memory
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>The database server detected an error in an attempt to acquire more memory space from the operating system.</p> <p>Suggested Action:</p> <p>See your operating-system documentation for more information about shmget().</p>

Not Enough Logical-log files

Description	Not Enough Logical-log files, Increase LOGFILES
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: During a data restore, the value of the LOGFILES configuration must always be greater than or equal to the total number of logical-log files. At some point during the restore, the number of logical-log files exceeded the value of LOGFILES. Suggested Action: Increase the value of LOGFILES in ONCONFIG.

Number of configured CPU poll threads exceeds NUMCPUVPS

Description	Number of configured CPU poll threads exceeds NUMCPUVPS
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The number of in-line poll threads that you specified in the ONCONFIG configuration file exceeds the number of CPU virtual processors. Suggested Action: Reduce the number of in-line poll threads to be less than or equal to the number of CPU virtual processors.

onconfig parameter parameter modified

Description	onconfig parameter parameter modified from old_value to new_value
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: When the database server shared memory is reinitialized, this message documents any changes that occurred since the last initialization. Suggested Action: None required.

oninit: Cannot have SINGLE_CPU_VP non-zero

Description	oninit: Cannot have SINGLE_CPU_VP non-zero and number of CPU VPs greater than 1
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The ONCONFIG file contains VPCLASS cpu with a num=value greater than 1, and a nonzero value for SINGLE_CPU_VP. SINGLE_CPU_VP must be 0 (or omitted) when there are more than 1 CPU VPs. Suggested Action: Correct the ONCONFIG file and restart the database server.

oninit: Cannot have SINGLE_CPU_VP non-zero and user-defined VP classes

Description	oninit: Cannot have SINGLE_CPU_VP non-zero and user-defined VP classes
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The ONCONFIG file contains a user-defined VPCLASS as well as a nonzero value for SINGLE_CPU_VP. SINGLE_CPU_VP must be 0 (or omitted) when the ONCONFIG file contains a user-defined VPCLASS. Suggested Action: Correct the ONCONFIG file and restart the database server.

oninit: Cannot mix parameters

Description	oninit: Cannot mix VPCLASS cpu and NUMCPUVPS, AFF_SPROC, AFF_NPROCS, or NOAGE parameters
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The ONCONFIG file contains both VPCLASS cpu and one or more of the other listed parameters. It cannot contain both. Suggested Action: Correct the ONCONFIG file and restart the database server.

oninit: invalid or missing name for Subsystem Staging Blobspace

Description	oninit: invalid or missing name for Subsystem Staging Blobspace
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: You set the configuration parameter STAGEBLOB to a blobspace that does not exist. Suggested Action: Use the -d option of onspaces to create the blobspace specified in STAGEBLOB, and restart the database server.

oninit: VPCLASS duplicate class name

Description	oninit: VPCLASS class name duplicate class name
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The VPCLASS classname in the ONCONFIG file has a duplicate name. VP class names must be unique. Suggested Action: Correct the duplicate name and restart the database server.

oninit: VPCLASS illegal option

Description	oninit: VPCLASS classname illegal option
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: One of the fields in the VPCLASS classname parameter is illegal. Suggested Action: Correct the parameter in the ONCONFIG file and restart the database server.

oninit: VPCLASS maximum number of VPs is out of range

Description	oninit: VPCLASS classname maximum number of VPs is out of the range 0-10000
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The maximum number of VPs specified by a VPCLASS parameter line must be in the range 1 to 10,000. Suggested Action: Correct the value and restart the database server.

oninit: VPCLASS name is too long

Description	oninit: VPCLASS classname name is too long. Maximum length is maxlength
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The length of the name field in VPCLASS classname is too long. Suggested Action: Choose a shorter class name, correct the ONCONFIG file, and restart the database server.

oninit: VPCLASS number of VPs is greater than the maximum specified

Description	oninit: VPCLASS classname number of VPs is greater than the maximum specified
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The initial number of VPs specified by a VPCLASS parameter is greater than the maximum specified by the same VPCLASS parameter. Suggested Action: Correct the VPCLASS parameter and restart the database server.

oninit: VPCLASS number of VPs out of range

Description	oninit: VPCLASS classname number of VPs is out of the range 0-10000
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The initial number of VPs specified by a VPCLASS parameter line must be in the range 1 to 10,000. Suggested Action: Correct the value and restart the database server.

onmode: VPCLASS name too long

Description	onmode: VPCLASS classname name is too long. Maximum length is maxlength.
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: The name of a dynamically added VP class specified by onmode -p is too long. Suggested Action: Pick a shorter name, and retry the onmode -p command.

Optical Subsystem is running

Description	Optical Subsystem is running
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: You have set the value of the STAGEBLOB parameter in the configuration file, and the database server is communicating properly with the optical-storage subsystem. Suggested Action: None required.

Optical Subsystem is not running

Description	Optical Subsystem is not running
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: You have set the value of the STAGEBLOB parameter in the configuration file, but the database server cannot detect the existence of the optical-storage subsystem. Suggested Action: Check that the optical subsystem is on-line.

Optical Subsystem STARTUP Error

Description	Optical Subsystem STARTUP Error
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: The database server detects that the optical-storage subsystem is running, but the database server cannot communicate with it properly. Suggested Action: Check your optical subsystem for errors.

On-Line Mode

Description	On-Line Mode
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server is in on-line mode. Users can access all databases. Suggested Action: This is a status message. No action is required.

onspaces: unable to reset dataskip

Description	onspaces: unable to reset dataskip
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: This error message comes from the onspaces utility. For some reason, the utility cannot change the specification of DATASKIP (ON or OFF) across all dbspaces in the database server instance. Suggested Action: You are unlikely to receive this message. If the error persists after you restart the database server, contact Informix Technical Support.

Open transaction detected

Description	Open transaction detected when changing log versions
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The database server detected an open transaction while it was trying to convert the data from a previous version of the database server. Suggested Action: Conversion is not allowed unless the last record in the log is a checkpoint. You must restore the previous version of the database server, force a checkpoint, and then retry conversion.

out of message shared memory

Description	out of message shared memory
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: Could not allocate more memory for the specified segment. Suggested Action: See the log file for additional information.

out of resident shared memory

Description	out of resident shared memory
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: Could not allocate more memory for the specified segment. Suggested Action: See the log file for additional information.

out of virtual shared memory

Description	out of virtual shared memory
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: Could not allocate more memory for the specified segment. Suggested Action: See the log file for additional information.

PANIC: Attempting to bring system down

Description	PANIC: Attempting to bring system down
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: A fatal database server error occurred. Suggested Action: See the error that caused the panic and attempt the corrective action suggested by the error message. Refer also to other messages in the message-log file for additional information that might explain the failure.

Participant site heuristically rolled back

Description	Participant site database_server heuristically rolled back
Severity	Major
Message Group	Inf_Admin
Help Text	Probable Cause: A remote site rolled back a transaction after it reached the prepared-for-commit phase. Suggested Action: You might need to roll back the transaction on other sites and then restart it.

Possible mixed transaction result

Description	Possible mixed transaction result
Severity	Major
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This message indicates that error -716 has been returned. Associated with this message is a list of the database servers where the result of a transaction is unknown.</p> <p>Suggested Action:</p> <p>See 'Determine If a Transaction Was Implemented Inconsistently' on page 31-4 in Informix documentation.</p>

Prepared participant site did not respond

Description	Prepared participant site server_name did not respond
Severity	Major
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>Too many attempts were made to contact remote site server_name. After several timeout intervals were met, the site was determined to be down.</p> <p>Suggested Action:</p> <p>Verify that the remote site is on-line and that it is correctly configured for distributed transactions. Once the remote site is ready, reinitiate the transaction.</p>

Prepared participant site not responding

Description	Prepared participant site server_name not responding
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: The database server is attempting to contact remote site server_name. For some unknown reason, the database server cannot contact the remote site. Suggested Action: Verify that the remote site is on-line and that it is correctly configured for distributed transactions.

Quiescent Mode

Description	Quiescent Mode
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server has entered quiescent mode from some other state. Only users logged in as informix or as root can interact with the database server. No user can access a database. Suggested Action: None required.

Recovery Mode

Description	Recovery Mode
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server entered the recovery mode. No user can access a database until recovery is complete. Suggested Action: None required.

Reversion failed

Description	Reversion failed
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: Errors encountered caused the reversion process to be cancelled. Suggested Action: Correct the cause of the errors, and restart reversion.

Reversion complete

Description	Reversion complete
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The reversion process was completed successfully. Suggested Action: None required.

Recreating index

Description	Recreating index: 'dbname:owner.tabname-idxname'
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: This message indicates which index is currently being re-created. Suggested Action: None required.

Rollforward of log record failed

Description	Rollforward of log record failed, iserrno = nn
Severity	Critical
Message Group	Inf_Perf
Help Text	Probable Cause: The message appears if, during fast recovery or a data restore, the database server cannot roll forward a specific logical-log record. The database server might be able to change to quiescent or on-line mode, but some inconsistency could result. See the message that immediately precedes this one for further information. The iserrno value is the RSAM error number. Suggested Action: Contact Informix Technical Support.

scan_logundo

Description	scan_logundo: subsystem ss, type tt, iserrno ee
Severity	Major
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>A log undo failed because log type tt is corrupt. The variables in this message have the following values:</p> <p>ss is the logical-log record type tt is the logical-log record type ee is the iserror number</p> <p>Suggested Action:</p> <p>Examine the logical log using the onlog utility to determine if any action is needed. Contact Informix Technical Support.</p>

Session completed abnormally. Committing

Description	Session completed abnormally. Committing tx id 0xm, flags 0xn
Severity	Warning
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>Abnormal session completion occurs only when the database server is attempting to commit a transaction that has no current owner, and the transaction develops into a long transaction. The database server forked a thread to complete the commit.</p> <p>Suggested Action:</p> <p>None required.</p>

Session completed abnormally. Rolling back

Description	Session completed abnormally. Rolling back tx id 0xm, flags 0xn
Severity	Warning
Message Group	Inf_Admin
Help Text	Probable Cause: Abnormal session completion occurs only when the database server is attempting to commit a distributed transaction that has no current owner, and the transaction develops into a long transaction. The database server forked a thread that rolled back the transaction. Suggested Action: None required.

semctl

Description	semctl: errno = nn
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: While initializing a semaphore, an error occurred. The UNIX operating-system error is returned. Suggested Action: See your operating-system documentation.

semget

Description	semget: errno = nn
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: An allocation of a semaphore set failed. The UNIX operating-system error is returned. Suggested Action: See your operating-system documentation.

shmat

Description	shmat: some_string os_errno: os_err_text
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: An attempt to attach to a shared-memory segment failed. The system error number and the suggested corrective action are returned. Suggested Action: Review the corrective action (if given), and determine if it is reasonable to try. Also consult your operating-system documentation for more information.

shmctl

Description	shmctl: errno = nn
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: An error occurred while the database server tried to remove or lock a shared-memory segment. The UNIX operating-system error number is returned. Suggested Action: See your operating-system documentation.

shmdt

Description	shmdt: errno = nn
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: An error occurred while the database server was trying to detach from a shared-memory segment. The UNIX operating-system error number is returned. Suggested Action: See your operating-system documentation.

shmem sent to filename

Description	shmem sent to filename
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The database server wrote a copy of shared memory to the specified file as a consequence of an assertion failure. Suggested Action: None required.

shmget

Description	shmget: some_str os_errno: key shmkey: some_string
Severity	Major
Message Group	Inf_Fault
Help Text	Probable Cause: Either the creation of a shared-memory segment failed or an attempt to get the shmid associated with a certain key failed. The system error number and the suggested corrective action are returned. Suggested Action: Consult your operating-system documentation.

Shutdown Mode

Description	Shutdown Mode
Severity	Warning
Message Group	Inf_Admin
Help Text	Probable Cause: The database server is in the process of moving from on-line mode to quiescent mode. Suggested Action: None required.

Space -- Recovery Begins

Description	Space spacename -- Recovery Begins(addr)
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This informational message indicates that the database server is attempting to recover the space. The variables in this message have the following values:</p> <p>spacename is the name of the dbspace or blobspace that the database server is recovering.</p> <p>addr is the address of the RSAM control block.</p> <p>Suggested Action:</p> <p>None required.</p>

Space -- Recovery Complete

Description	Space spacename -- Recovery Complete(addr)
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This informational message indicates that the database server recovered the space. The variables in this message have the following values:</p> <p>spacename is the name of the dbspace or blobspace that the database server has recovered.</p> <p>addr is the address of the RSAM control block.</p> <p>Suggested Action:</p> <p>None required.</p>

Space -- Recovery Failed

Description	Space spacename -- Recovery Failed(addr)
Severity	Warning
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>This informational message indicates that the database server was unable to recover the space. The variables in this message have the following values:</p> <p>spacename is the name of the dbspace or blob space that the database server failed to recover</p> <p>addr is the address of the RSAM control block</p> <p>Suggested Action:</p> <p>None required.</p>

sysmaster database built successfully

Description	sysmaster database built successfully
Severity	Normal
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>The database server successfully built the sysmaster database.</p> <p>Suggested Action:</p> <p>None required.</p>

Table tablename set to resident

Description	Table tablename set to resident
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The indicated table has been made resident by the SET TABLE statement. Suggested Action: None required.

Table and indexes set to resident

Description	Table tablename and all its indexes set to resident
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: The indicated table and all its indexes have been made resident by the SET TABLE statement. Suggested Action: None required.

Tables have outstanding old version data pages

Description	The following tables have outstanding old version data pages
Severity	Minor
Message Group	Inf_Admin
Help Text	<p>Probable Cause:</p> <p>Reversion to a previous version of the database server has been attempted while an in-place ALTER TABLE is in progress. The previous versions of the database server are unable to handle tables that have multiple schemas of rows in them.</p> <p>Suggested Action:</p> <p>Force any in-place alters to complete by updating the rows in the affected tables before you attempt to revert to a previous version of the database server. To do this, create a dummy update in which a column in the table is set to its own value, forcing the row to be updated to the latest schema in the process without actually changing column values. Rows are always altered to the latest schema, so a single pass through the table that updates all rows will complete all outstanding in-place alters.</p>

TIMER VP: Could not redirect I/O in initialization

Description	TIMER VP: Could not redirect I/O in initialization, errno = nn
Severity	Major
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>Could not open /dev/null or duplicate the file descriptor associated with the opening of /dev/null. The system error number is returned.</p> <p>Suggested Action:</p> <p>See your operating-system documentation.</p>

Too Many Active Transactions

Description	Too Many Active Transactions
Severity	Warning
Message Group	Inf_Conf
Help Text	Probable Cause: During a data restore, there were too many active transactions. At some point during the restore, the number of active transactions exceeded 32 kilobytes. Suggested Action: None required.

Transaction Not Found

Description	Transaction Not Found
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: The logical log is corrupt. This situation can occur when a new transaction is started, but the first logical-log record for the transaction is not a BEGWORK record. Suggested Action: Contact Informix Technical Support.

Transaction heuristically rolled back

Description	Transaction heuristically rolled back
Severity	Normal
Message Group	Inf_Conf
Help Text	Probable Cause: A heuristic decision occurred to roll back a transaction after it completed the first phase of a two-phase commit. Suggested Action: None required.

Transaction table overflow

Description	Transaction table overflow - user id nn, process id nn
Severity	Minor
Message Group	Inf_Conf
Help Text	Probable Cause: A thread attempted to allocate an entry in the trans-action table when no entries in the shared-memory table were available. The user ID and process ID of the requesting thread are displayed. Suggested Action: Try again later.

Unable to create output file

Description	Unable to create output file filename errno = nn
Severity	Minor
Message Group	Inf_Fault
Help Text	Probable Cause: Cannot create output file filename. The errno value is the number of the UNIX error returned. Suggested Action: Verify that the directory exists and has write permissions.

Unable to extend reserved pages

Description	Unable to extend nn reserved pages for purpose in ROOT chunk
Severity	Major
Message Group	Inf_Conf
Help Text	<p>Probable Cause: Cannot extend to nn reserved pages for purpose in root chunk. (The value purpose can be either Check-point/ Log, DBSpace, Chunk, or Mirror Chunk).</p> <p>Suggested Action: Reduce the ONCONFIG parameter for the resource cited; bring the database server up and free some space in the primary root chunk. Then reattempt the same operation.</p>

Unable to initiate communications

Description	Unable to initiate communications with the Optical Subsystem
Severity	Major
Message Group	Inf_Fault
Help Text	<p>Probable Cause: The optical driver supplied by the optical-drive vendor has indicated that drive is not accessible.</p> <p>Suggested Action: Check driver installation and cabling between the computer and the drive.</p>

Unable to start SQL engine

Description	Unable to start SQL engine
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: The database server encountered an out-of-memory condition. Suggested Action: None required.

Unable to open tblspace

Description	Unable to open tblspace nn, iserrno = nn
Severity	Major
Message Group	Inf_Admin
Help Text	Probable Cause: The database server cannot open the specified tblspace. (The value nn is the hexadecimal representation of the tblspace number.) Suggested Action: See the ISAM error message number nn, which should explain why the tblspace cannot be accessed. The error message is contained in Informix Error Messages in Answers OnLine.

Virtual processor limit exceeded

Description	Virtual processor limit exceeded
Severity	Major
Message Group	Inf_Conf
Help Text	Probable Cause: You configured the database server with more than the maximum number of virtual processors allowed (1000). Suggested Action: To reduce the number of virtual processors, decrease the values of VPCLASS, NUMCPUVPS, NUMAIOVPS, or NETTYPE in your ONCONFIG file.

VPCLASS name is too long

Description	VPCLASS classname name is too long. Maximum length is maxlength
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: Indicates an internal error. Suggested Action: Contact Informix Technical Support.

VPCLASS duplicate class name

Description	VPCLASS classname duplicate class name
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: Indicates an internal error. Suggested Action: Contact Informix Technical Support.

VPCLASS not enough physical procs

Description	VPCLASS classname not enough physical procs for affinity
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>The physical processors in the affinity specification for the VP class classname do not exist or are off-line. The problem might be with the VPCLASS parameter for cpu class VPs or with the AFF_SPROC and AFF_NPROCS parameters.</p> <p>Suggested Action:</p> <p>Make sure the named processors are on-line. Correct the affinity specification for the named VP class. Restart the database server.</p>

WARNING: aio_wait

Description	WARNING: aio_wait: errno = nn
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>While the database server was waiting for an I/O request to complete, it generated error number nn on an operation that it was attempting to execute.</p> <p>Suggested Action:</p> <p>Contact Informix Technical Support for assistance.</p>

WARNING: Buffer pool size

Description	WARNING: Buffer pool size may cause Dynamic Server to get into a lkd state
Severity	Critical
Message Group	Inf_Conf
Help Text	<p>Probable Cause:</p> <p>There are not enough buffers in the buffer pool. The database server could use all available buffers and cause a deadlock to occur.</p> <p>Suggested Action:</p> <p>Change the BUFFERS parameter in the ONCONFIG file to the number that this message recommends. For more information on the BUFFERS parameter, see 'BUFFERS' on page 33-12.</p>

warning: chunk timestamps are invalid

Description	warning: chunk timestamps are invalid
Severity	Critical
Message Group	Inf_Fault
Help Text	<p>Probable Cause:</p> <p>A sanity check is performed on chunks when they are first opened at system initialization. The chunk specified did not pass the check and will be brought off-line.</p> <p>Suggested Action:</p> <p>Restore the chunk from a dbspace backup or its mirror.</p>

Warning: unable to allocate requested big buffer

Description	Warning: unable to allocate requested big buffer of size nn
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: The internal memory allocation for a big buffer failed. Suggested Action: Increase either virtual memory size (SHMVIRTSIZE), the size of the added segments (SHMADD), or your total shared-memory size (SHMTOTAL).

... dropping sysmaster database

Description	... dropping sysmaster database
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Dropping sysmaster database during the reversion process. Suggested Action: None required.

... reverting indexes

Description	... reverting indexes
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Reverting indexes back to pre-6.0 format. Suggested Action: None required.

... reverting reserved pages

Description	... reverting reserved pages
Severity	Normal
Message Group	Inf_Fault
Help Text	Probable Cause: Reverting reserved pages. Suggested Action: None required.

... reverting tables

Description	... reverting tables that underwent In-Place Alter
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Reverting tables that underwent in-place alter. Suggested Action: None required.

Informix Dynamic Server Version

Description	HH:MM:SS Informix Dynamic Server Version R.VV.PPPPP Software Serial Number RDS#YYYYYYY
Severity	Normal
Message Group	Inf_Admin
Help Text	Probable Cause: Startup of the database server, after the initialization of shared memory. Suggested Action: None required.

argument: invalid argument

Description	argument: invalid argument
Severity	Critical
Message Group	Inf_Fault
Help Text	Probable Cause: This internal error indicates that an invalid argument was passed to an internal Informix routine. Suggested Action: Contact Informix Technical Support.

function_name: cannot allocate memory

Description	function_name: cannot allocate memory
Severity	Critical
Message Group	Inf_Conf
Help Text	Probable Cause: Could not allocate memory from internal shared-memory pool. Suggested Action: Increase either virtual-memory size (SHMVIRTSIZE), the size of the added segments (SHMADD), or your total shared-memory size (SHMTOTAL).

WARNING

Description	
Severity	Warning
Message Group	Inf_Admin
Help Text	<p>Probable Cause: An unknown WARNING has occurred.</p> <p>Suggested Action: Review the warning message and consult an Informix manual for details. The automatic action for this condition runs 'tail -50' against the logfiles to collect additional messages that may be relevant.</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 Informix Scheduled Task policies:

Policy Name	Description	Metric
DBSPI-Inf-05min-DrillDown	Runs the Informix DBSPI collector/analyzer every 5 min with drill down metrics	I217, I219
DBSPI-Inf-15min-DrillDown	Runs the Informix DBSPI collector/analyzer every 15 min with drill down metrics	I261
DBSPI-Inf-UDM-YYmin	Runs the Informix DBSPI collector/analyzer every YY minutes	17XX
DBSPI-MeasureWare	DBSPI MeasureWare Data Feed (every 5 minutes)	N/A
DBSPI-Inf-05min	Runs the Informix DBSPI collector/analyzer every 5 minutes	I001 - I003, I015, I017, I019, I020, I032-I033, I036, I037-I040, I047, I056-I058, I061, I064-I066, I073-I076
DBSPI-Inf-15min	Runs the Informix DBSPI collector/analyzer every 15 minutes	I005, I007, I031, I060, I070-I071
DBSPI-Inf-1h	Runs the Informix DBSPI collector/analyzer every 1 hour	I041- I044, I050-I054, I059, I069
DBSPI-Inf-Daily	Runs the Informix DBSPI collector/analyzer daily	I022, I024
DBSPI-Inf-05min-Reporter	Runs the Informix DBSPI collector/analyzer every 5 min with Reporter metrics	I201
DBSPI-Inf-1d-Reporter	Runs the Informix DBSPI collector/analyzer once per day with Reporter metrics	I216, I218, I221, I245

2 Informix Tools, Reports, and Graphs

This chapter provides Informix 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*.

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

The Informix collector command is `dbspicai`.

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

Table 1 Informix SPI tools

Tool	Description	Command
DB-Access	Runs sql statements, executes queries, creates and drops tables.	<code>dbspiali -i dbaccess</code>
On-Monitor	Starts, stops database, sets database configuration parameters, and provides database views.	<code>dbspiaoi -i onmonitor</code>
Informix Server Status	Provides status information for a specified database server.	<code>dbspiali -i onstat</code>
On-Check	Checks Root Reserved Pages, Checks System Catalog Tables, Checks Index Key Values.	<code>dbspiali -i oncheck</code>
Query Processor	Processes Xtree queries.	<code>dbspiali -i xtree</code>

Table 1 Informix SPI tools

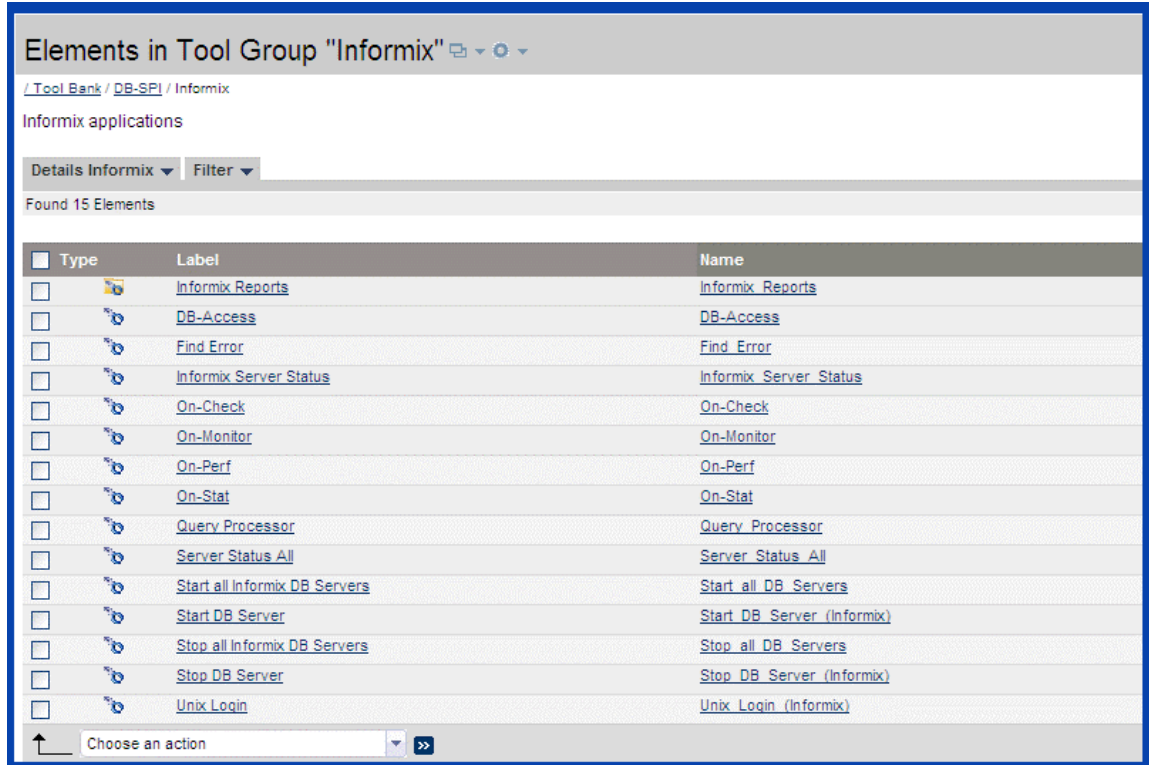
Start DB Server	Starts a database server selected from list.	<code>dbspiali -i dbstart</code>
On-Perf	Graphs Informix performance data.	<code>dbspiali -i onperf</code>
Find Error	Looks up error message text.	<code>dbspiali -i finderr</code>
On-Stat	Provides status of Informix database.	<code>dbspiali -i onstat</code>
Start All Informix DB Servers	Starts all database servers found in dbtab.	<code>dbspiali -a dbstart</code>
Stop DB Server	Shuts down database server selected from list.	<code>dbspiali -i dbstop</code>
Stop All Informix DB Servers	Shuts down all database servers found in dbtab.	<code>dbspiali -a dbstop</code>
Server Status All	Provides status information for all Informix database servers found in dbtab.	<code>dbspiali -a dbstatus</code>
UNIX Login	Provides Unix login as Informix user.	<code>dbspixterm -e su - informix</code>



The On-Check tool does not work on Informix Extended Parallel Server (XPS) 8.51.

The On-Check and the On-Stat tools fail on HP-UX, Linux, and Solaris nodes.

Figure 1 Informix SPI Tools



Reports

HPOM generated reports cover *availability*, *size*, and *workload* of each managed nodes 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 Informix metric I216_InstSize 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_INF_REPORT

Specification file to create the datasource dbspiosmg.sp

Database Instance name: <name of the database instance>

Table 2 Informix Reports available from the HPOM Console

Report Name	Description	Reporter Table Columns			
		Metric id	Object id	Value id	Value
Informix Availability	Reports uptime information	I201	Server Instance Name	1	Up=5 Down=0
Informix Instance Size	Instance size in MB allocated and free	I216	Server Instance Name	1	Megabytes Allocated
				2	Megabytes Free
Informix DBSpace Size	Database size in MB allocated and free	I218	Database Name	1	Megabytes Allocated
				2	Megabytes Free
Informix Table Size	Table size in MB allocated	I221	Table Name	1	Megabytes Allocated
Informix Workload Informix I/O	Number of physical reads and writes to the disk since the last collection for each tablespace.	I245	Table Name	1	Table I/O rate
Informix Sessions	Number of sessions	I007	N/A, these metrics are stored in the graphing data source.		
Informix Transactions	Number of transactions	I056			

Table 2 Informix Reports available from the HPOM Console

Report Name	Description	Reporter Table Columns			
		Metric id	Object id	Value id	Value
Informix 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.			
Informix History Message Severity	Message severities for acknowledged messages as shown over extended time period.				
Informix Active Messages - Top 20	Top 20 unacknowledged messages at the time of report generation				
Informix History Messages - Top 20	Top 20 acknowledged messages at the time of report generation.				

Graphs

Graphs represent pictorial representation of metrics. The following section provides information on Informix-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 [Informix Metric Summary](#) on page 13, 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 Informix SPI. For metric definitions see, [Chapter 1, Informix Metrics](#).

Datasource name: DBSPI_INF_GRAPH

Specification file to create the datasource: dbspiinfg.sp

Database Instance name: <name of the database instance>

Table 3 Graphs for Informix Metrics

Graph Name	Metric Number
Server Status	I001, I002, I003
Sessions	I005, I007
Log Statistics	I015, I064, I065, I066
Checkpoint Statistics	I069, I070, I071
Shared Memory Total	I031
Shared Memory Usage	I032, I033, I037, I039, I039
Writes	I042, I043, I044
Locks	I073, I074, I075, I076
Sort Space	I054
Sort and Scan Statistics	I047, I050, I051, I052, I053
Transactions	I056, I057, I058, I059, I060
Locking	I073, I074, I075, I076

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 `dbspiinfg.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

INSTANCE NAME	I001_Process Status	I002_Instance StatusT	I003_Accessible	...
<value>	<value>	<value>	<value>	<value>
<value>	<value>	<value>	<value>	<value>

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