



PrimeAlert for Oracle

Detailed Attribute and Alarm Information

Halcyon's PrimeAlert for Oracle™ ensures the health and availability of Oracle database servers.

This document lists all the database attributes that PrimeAlert for Oracle gathers from the database it is monitoring, and indicates the default alarm thresholds used to determine alarm conditions.

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1 ABOUT THIS GUIDE

1.1 Audience

This document is intended for Administrators of Halcyon's PrimeAlert for Oracle who need to tune the alarming capabilities of the module to suit their environment. This document can also be used by Operational Managers to understand the capabilities of Halcyon's PrimeAlert for Oracle.

1.2 Document Organization

This document is organized into 3 main Chapters:

Chapter 2 provides an introduction and overview of the features and benefits in using the software.

Chapter 3 describes how the database properties are organized within the module.

Chapter 4 describes each database property being monitored. This Chapter is divided into sub-section. Each sub-section represents a branch in the object hierarchy.

1.3 Conventions

Links to other locations within this document are shown in [blue, underlined text](#).

1.4 Contacting Halcyon

For more information about this product contact Halcyon Monitoring Solutions at:

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2 INTRODUCTION

PrimeAlert for Oracle™ provides real-time, proactive monitoring of the health and statistics of Oracle database servers. This includes health indicators and statistics of Oracle processes, alert log files, extents, segments, tablespaces, data files, directory sizes, and user statistics.

2.1 Features

The PrimeAlert for Oracle has the following features:

1. Provide real-time information on the health and availability of Oracle databases.
Allows DBA and system administrators to be aware of the current state of mission critical Oracle databases at all times.
2. Monitors space usage and distribution for critical system resources.
Provides DBAs with an early warning to potential space problems. Allows capacity planning and tablespace reorganization to be proactive instead of reactive.
3. Continuously and actively monitors the alert log for significant internal error messages.
Catches internally generated errors immediately instead of after the fact.
4. Tracks space allocations for critical segments.
Provides proactive monitoring of potential space problems with segments.
5. Tracks fragmentation issues.
Allows DBAs to plan and address fragmentations issues before they become a performance concern.
6. Tracks the overall health of the Oracle kernel processes.
Allows system administrators to understand the impact of Oracle databases from a systems perspective.
7. Tracks user logins and activity.
Simplifies diagnostics of performance issues related to users.
8. Monitors key Oracle and system performance statistics.
Allows the delivery of consistent service levels by identifying and addressing performance bottlenecks.

3 OBJECT HIERARCHY



4 PRIMEALERT FOR ORACLE

4.1 Identification

The Identification section displays the basic information required to identify an Oracle database instance.

Property	Description	Default Alarm Limits
Database	The name of the database instance.	N/A
Host	The name of the host machine where the database instance is running.	
Version	The version of the Oracle Server running on this host.	

4.2 Initialization Parameters

The Initialization Parameters section displays values of certain key parameters from the init.ora file. Note, it can be useful to set alarm thresholds at the current values. This will alert users if the value is changed.

Property	Description	Default Alarm Limits
Database Block Buffers	Displays the number of DB block buffers in the buffer cache. This parameter, together with DB_BLOCK_SIZE, determines the total size of the buffer cache in the SGA.	
DML Locks	The maximum number of DML locks.	
Enqueue Resources	The number of resources that can be locked concurrently.	
Shared Pool Size	The size (bytes) of the shared pool.	
Sort Area Retained Size	The maximum amount (bytes) of user global area (UGA) memory retained after a sort run completes. The retained size controls the size of the read buffer, which Oracle uses to maintain a portion of the sort in memory. This memory is released back to the UGA, not to the operating system, after the last row is fetched from the sort space.	
Sort Area Size	The maximum amount (bytes) of memory Oracle will use for a sort. After the sort is complete, but before the rows are returned, Oracle releases memory down to the size specified by the SORT_AREA_RETAINED_SIZE parameter. After the last row is returned, Oracle releases the remainder of the memory.	
Transaction Limit	The maximum number of concurrent transactions.	
Transactions per Rollback Segment	The number of concurrent transactions allowed for each rollback segment.	
Maximum Shared Server Processes	The number of shared server processes in the multithreaded server configuration.	

4.3 Server Performance

The Server Performance section displays three tables providing performance information for Oracle and the server.

The Performance Statistics table monitors key performance parameters of Oracle

Performance Statistics		
Property	Description	Default Alarm Limits
Library Cache Hit Ratio	The library cache contains already parsed SQL statements and cursors. This value is used to determine how many SQL statements can be reused.	Error: value < 85 Warning: value < 90
Data Dictionary Cache Hit Ratio	The dictionary cache contains information about tables. This value is used to determine whether this information can be found in the cache.	Error: value < 85 Warning: value < 90
Buffer Cache Hit Ratio	Records the percentage of times a required data block is in memory.	Error: value < 70 Warning: value < 80
Rollback Buffer Busy Waits Ratio	Monitors the contention of rollback segment buffers.	Error: value > 10
Lock Hit Ratio	Monitors the number of times an obtained lock is of the correct type as a percentage of total lock requests	Error: value < 80 Warning: value < 95
% Used Reserved Enqueue Resources	Displays the percentage of initially allocated enqueue resources that are used; the number of initially allocated enqueue resources can be found in the Initialization Parameters table; the value for this row can be over 100 percent since the number of initially allocated enqueue resources does not equal the maximum number of enqueue resources that can be allocated in some versions of Oracle.	Error: value > 95 Warning: value > 80
Redo Allocation Get Ratio	Monitors the Redo Allocation Latch by comparing the Misses and Gets	Warning: value > 1
Redo Allocation Immediate Gets Ratio	Monitors the Redo Allocation Latch by comparing the Immediate Misses and Immediate Gets	Warning: value > 1
Redo Copy Get Ratio	Monitors the Redo Copy Latch by comparing the Misses and Gets	Warning: value > 1
Redo Copy Immediate Get Ratio	Monitors the Redo Copy Latch by comparing the Immediate Misses and Immediate Gets	Warning: value > 1
Connection Probe	Displays whether an additional connection to the Oracle database is possible.	Error: value = "FAILED"

The File I/O Monitor table lists read and write statistics for Oracle data files. All values are averaged over the last 10 minutes.

File I/O Monitor		
Property	Description	Default Alarm Limits
File Name	Name of the Oracle file.	
Physical Reads (Blocks/sec)	Displays the number of physical data blocks that are read per second.	
Physical Writes (Blocks/sec)	Displays the number of physical data blocks that are written per second.	

The Network I/O Monitor table lists input and output statistics for all network interfaces on the local host.

Network I/O Monitor		
Property	Description	Default Alarm Limits
Interface	Name of the interface	
Input Packets (Packets/sec)	The number of inbound packets per second.	
Input Packet Errors (%/sec)	The percentage of input packet errors per second.	
Output Packets (Packets/sec)	The number of outbound packets per second.	
Output Packet Errors (%/sec)	The percentage of output packet errors per second.	
Packet Collisions (Packets/sec)	The number of packet collisions per second.	
Output Packet Collisions (%/sec)	The percentage of outbound packet collisions per second.	

4.4 MTS Management

The MTS Management table displays information about multithreaded Oracle configurations.

MTS Management		
Property	Description	Default Alarm Limits
% Active Shared Servers	Displays the percentage of shared servers that are active; the maximum number of shared processes is shown in the Initialization Parameters table.	Error: value > 95 Warning: value > 90 Info: value > 85
Shared Servers Wait Time (sec)	Displays the average time in seconds requests are in the shared servers' input queue.	Error: value > 20 Warning: value > 18 Info: value > 10

The Dispatchers Activity table displays information about dispatcher processes on multithreaded Oracle configurations.

Dispatchers Activity		
Property	Description	Default Alarm Limits
Dispatcher Name	Displays the name of the dispatcher process.	
Protocol Name	Displays the protocol used by the dispatcher process.	
Busy Time (%)	Displays the percentage of time the dispatcher is serving requests.	Error: value > 90 Warning: value > 70 Info: value > 50
Dispatcher Wait Time (sec)	Displays the average time in seconds responses are in the dispatcher's output queue.	Error: value > 20 Warning: value > 18 Info: value > 10

4.5 Lock Management

The Lock Management table displays lock information that can be helpful in diagnosing performance problems due to user contention.

Lock Management		
Property	Description	Default Alarm Limits
% Active DML Locks	<p>The percentage of data manipulation locks in use compared to the maximum number of such locks. Provides a measure of locks that are held and locks that are requested for the database instance.</p> <p>Thresholds should be based on a high percentage of DML locks used. Adjust the alarm thresholds to be some value greater than the normally expected percentage of DML locks to determine an abnormally high number of locks used. The thresholds should be set to give ample warning before transactions start failing due to the inability to acquire locks.</p>	<p>Error: value > 90%</p> <p>Warning: value > 80%</p>

The Latch Statistics table provides latch activity information for processes of the database. They indicate whether latches are available to users when requested. Latches are low-level locks on shared internal structures.

Latch Statistics		
Property	Description	Default Alarm Limits
Name	Name of the latch statistic.	
Get Ratio	Ratio of gets to gets plus misses.	Info: value < 0.3
Immediate Get Ratio	Ratio of immediate gets to immediate gets plus immediate misses.	Info: value < 0.3

4.6 Process Management

The Process Management table indicates if a shutdown of Oracle is in progress.

Process Management		
Property	Description	Default Alarm Limits
Shutdown in Progress	Boolean value that reports if a shutdown is in progress.	Info: value != false

The Process Errors table lists any Oracle background process that is in error.

Process Errors		
Property	Description	Default Alarm Limits
Process Name	The name of the Oracle process in error.	
Error	Error code of the background process. Generates an alarm if any background process has an error code greater than 0.	Error: value > 0

The Process table displays statistics on the state of the Oracle archiver, checkpoint, database writer, log writer, process monitor, recoverer, system monitor, listener and Oracle MTS dispatchers and servers background processes. Note, if the PrimeAlert for Oracle is not running on the same host as the database instance, no information will be provided in this table.

Process		
Property	Description	Default Alarm Limits
Description	Name of the process.	
Command	Command used to start the process.	
Count	The number of instances of the process. Thresholds for the Count object should be used to determine when a process is not running or when too many processes are running concurrently. Set the less than "<" threshold to 1 to determine when a process has died. Typically, an alarm action is set to restart the process when it this occurs. Set the greater than ">" threshold to a value that is greater than the number of Oracle processes normally running.	
% CPU	Percentage of CPU used by the process. Thresholds should be set to determine high CPU consumption by Oracle processes. In general, set the thresholds to some value greater than the normal expected value to determine any abnormal CPU usage.	
RSS	The resident set size of the process. Thresholds should be set to determine high RSS memory usage by Oracle processes. In general, set the thresholds to some value greater than the normally expected value to determine any abnormal memory usage.	
SZ	The size of the process. Thresholds should be set to determine high SZ memory usage by Oracle processes. In general, set the thresholds to some value greater than the normally expected value to determine any abnormal memory usage.	

4.7 Recovery Management

The Recovery Management table displays information on redo logs and the archive process. Problems with redo logs can affect the recoverability of a database in the event of instance failure. Problems with archival can cause a database instance to be blocked pending archiving of redo logs.

Recovery Management		
Property	Description	Default Alarm Limits
Archive Directory	The archive log directory as specified in init.ora parameter LOG_ARCHIVE_DEST.	
Redo Log Size	The size of the redo log (bytes).	
Archive Capacity Remaining	The number of additional redo logs that can be accommodated in the available free space of the archive directory. The alarm threshold should be set so that the DBA has ample time to correct the situation where there may not be sufficient space in the archive directory.	

Recovery Management		
Redo Log Space Wait Ratio	The ratio of redo log space requests to redo entries. It measures memory allocation. If it is greater than 1 / 5,000, then the redo log buffer should be increased until the redo log space wait ratio stops failing.	Info: value > 0.0002
Redo Logs Not Archived	The number of redo log files that have been written but not yet archived, excluding the current online redo log file. The effectiveness of the archiver process decreases as the number of redo logs that are not archived increases. Even having one log not archived is detrimental.	Error: value > 0

The Redo Log Statistics table provides information that could indicate problems with the size of redo logs and/or the number of redo log groups.

Redo Log Statistics		
Property	Description	Default Alarm Limits
Number of Entries	A cumulative count of the number of times a redo entry is written to the redo log buffer.	
Space Requests	A cumulative count of the number of times a process waited for a redo buffer entry.	
Synch Writes	A cumulative count of the number of times the log buffer must be written to disk.	

The Redo Log Status table provides status information for all the redo logs.

Redo Log Status		
Property	Description	Default Alarm Limits
Group	Displays the group number of the redo log.	
Member	Displays the full path of the redo log member.	
Status	Displays the redo log status.	Error: value != ok

4.8 Space Management

4.8.1 Alert Log

This section provides size and growth rate of the alert log. If not monitored, the log may grow until it exhausts the underlying file system partition. Note, if the PrimeAlert for Oracle is not running on the same host as the database instance, no information will be provided in this section.

Property	Description	Default Alarm Limits
Name	Full path and name of the Oracle alert log.	
Size	The size (bytes) of the file. This object can be used to control the size of the alert log and prevent it from growing out of bound.	
Growth Rate	Rate at which the file size is changing in bytes per second.	
Last Modified	The date and time when the file was last modified.	

4.8.2 Chained Rows

These tables provide information on rows that span extents, usually due to update growth.

The Analyze Table Status table provides the most recent date that any table was analyzed. If tables are not analyzed, the information in Chained Rows table has no meaning.

Analyze Table Status		
Property	Description	Default Alarm Limits
Last Analyze Date	Displays the most recent date that any table was analyzed.	Info: value = "ANALYZE TABLE NEVER RUN"

The Chained Rows table lists the number of chained rows for each table.

Chained Rows		
Property	Description	Default Alarm Limits
Owner	The owner of the table.	
Table Name	The name of the table.	
Chain Count	The number of chained rows. Chaining is unavoidable in some situations such as tables that have a LONG column or long CHAR or VARCHAR2 columns. It would not be a good idea to set an alarm limit in these cases, however alarm limits can be set for other tables to avoid excessive I/O. Since performance decreases as the chain count increases, a value should be set that indicates that performance has degraded due to fragmentation to a point where the problem should be resolved as soon as possible.	Info: value > 2

4.8.3 Data Files

These tables provide status and availability information of data files. Data files are the building blocks for tablespaces. Data file problems may necessitate recovery.

Data File Status		
Property	Description	Default Alarm Limits
Name	Name of the data file.	
Status	Data file status (e.g. whether the file is online or offline).	
Error	Reason that data file recovery is required, if applicable. If not "ok", an alarm will be automatically generated indicating the reason a recovery of the data file is required.	Error: value != ONLINE

Data File Availability		
Property	Description	Default Alarm Limit
Name	Name of the data file.	
Status	Data file status (e.g. whether the file is online or offline). If the data file is in some other state than being online, an alarm is automatically issued.	Error: value != ONLINE

4.8.4 Directory Sizes

This table provides the current sizes of key Oracle directories containing the alert log, trace files, and potential core files. Note, if the PrimeAlert for Oracle is not running on the same host as the database instance, no information will be provided in this section.

Property	Description	Default Alarm Limit
Name	Name of key Oracle directories.	
Size	The size of the directory in Kbytes. This object can be used to control the size of the directory and prevent it from growing out of bound.	
Growth Rate (KB/sec)	The rate at which the directory size is changing in Kbytes per second.	

4.8.5 Extents

4.8.5.1 Unallocatable Extents

This section displays any segments whose next extent is greater than the largest available extent in the tablespace. As a result, the segment will not be able to allocate their next extent should that next extent be required. Typically, a tablespace reorganization or addition of data files to a tablespace is necessary to rectify this issue.

Property	Description	Default Alarm Limits
Owner	The owner of the segment.	
Segment Name	The name of the segment.	
Segment Type	The type of the segment (e.g. TABLE, INDEX).	
Tablespace	The name of the tablespace to which the segment belongs.	
Extent (KB)	The size (in KB) of the next extent for the segment. A critical alarm is automatically generated if the next extent size is smaller than the largest free extent in the tablespace.	
Largest (KB)	The size (in KB) of the largest free extent in the associated tablespace.	

4.8.5.2 Unallocatable Extents Tracked

This table is similar to the Unallocatable Extents table except that users can track specific segments for extent allocation issues.

Property	Description	Default Alarm Limit
Owner	The owner of the segment.	
Segment Name	The name of the segment.	
Segment Type	The type of the segment (e.g. TABLE, INDEX).	
Tablespace	The name of the tablespace to which the segment belongs.	
Extent (KB)	The size (in KB) of the next extent for the segment. A critical alarm is automatically generated if the next extent size is smaller than the largest free extent in the tablespace.	
Largest (KB)	The size (in KB) of the largest free extent in the associated tablespace.	

4.8.5.3 Percent Used

This section displays the percentage of extents in use (compared to the maximum number of extents) in each segment. Typically, once that limit is reached, the underlying maximum extents would have to be altered for the segment.

Property	Description	Default Alarm Limit
Owner	The owner of the segment.	
Segment Name	The name of the segment.	
Segment Type	The type of the segment (e.g. TABLE, INDEX).	
% Used	The percentage of extents that are in use by the segment. If the segment is of fixed size, then there is no need to issue an alarm on the percentage of extents used. If the segment is not static, then the alarm limit should be set so that the DBA is given ample warning so that space can be added to the segment.	Error: value > 95% Warning: value > 90%

4.8.5.4 Percent Used Tracked

This table is similar to the Percent Used table. In this table users can specify the segment to be tracked.

Property	Description	Default Alarm Limit
Owner	The owner of the segment.	
Segment Name	The name of the segment.	
Segment Type	The type of the segment (e.g. TABLE, INDEX).	
% Used	The percentage of extents that are in use by the segment. If the segment is of fixed size, then there is no need to issue an alarm on the percentage of extents used. If the segment is not static, then the alarm limit should be set so that the DBA is given ample warning so that space can be added to the segment.	Error: value > 95% Warning: value > 90%

4.8.6 Segments

4.8.6.1 Rollback Segment Status

This table provides information on the status of the rollback segments. An insufficient number of rollback segments could prevent user transactions from completing.

Property	Description	Default Alarm Limit
Owner	The owner of the rollback segment.	
Segment	The name of the rollback segment.	
Status	The status of the rollback segment.	Info: value != ONLINE

4.8.6.2 Fragmentation

This table provides information on those segments that have potential problems with fragmentation, as detected by monitoring the number of extents used by each segment. Typically, fragmentation problems result in performance degradation and require table reorganization to address the problems.

Property	Description	Default Alarm Limit
Owner	The owner of the segment.	
Segment Name	The name of the segment.	
Segment Type	The type of the segment (e.g. TABLE, INDEX).	
Extents	The number of extents used in the segment. Performance degrades as the number of extents used increases. The alarm limits should be set so that the DBA knows that performance is going to approach an unacceptable level and something should be done about it before it becomes unacceptable. Generally, greater than 5 extents used are unacceptable.	Error: value > 5 Warning: value > 3
Growth	The first order rate of growth of each segment, based on a decaying linear fit algorithm.	Info: value > 1

4.8.6.3 Fragmentation Tracked

This table is similar to the Fragmentation table. In this table users specify the segments to be tracked for fragmentation.

Property	Description	Default Alarm Limit
Owner	The owner of the segment.	
Segment Name	The name of the segment.	
Segment Type	The type of the segment (e.g. TABLE, INDEX).	
Extents	The number of extents used in the segment. Performance degrades as the number of extents used increases. The alarm limits should be set so that the DBA knows that performance is going to approach an unacceptable level and something should be done about it before it becomes unacceptable. Generally, greater than 5 extents used are unacceptable.	Error: value > 5 Warning: value > 3
Growth	The first order rate of growth of each segment, based on a decaying linear fit algorithm.	Info: value > 1

4.8.6.4 Snapshot Logs

This table provides information on the size of each snapshot log.

Property	Description	Default Alarm Limit
Log Owner	The owner of the log table	
Log Table	The name of the log table	
Size	The size of the log table in bytes	

4.8.7 Tablespaces

These tables provide information on the status and space usage of each tablespace.

The Tablespaces Status table provides the status of each tablespace. For example, if a tablespace is offline (perhaps due to a tablespace backup in progress).

Tablespaces Status		
Property	Description	Default Alarm Limit
Name	Name of the tablespace	
Status	Status of the tablespace	Error: value != ONLINE

The Tablespaces % Used table provides the space usage of each tablespace. Problems with insufficient free space could require addition of data files.

Tablespaces % Used		
Property	Description	Default Alarm Limit
Name	Name of the tablespace.	
% Used	Percentage of space used in the tablespace. If a tablespace is of fixed size, then there is no need to issue an alarm on the percentage of tablespace used. If the tablespace is not static, then the alarm threshold can be set so that the DBA is given ample warning to add space to the database.	Error: value > 95% Warning: value > 90%

4.9 User Management

4.9.1 User Resources

This table displays miscellaneous shared user resource information.

User Resources		
Property	Description	Default Alarm Limit
Free Connections	The number of unused DB connections available to users.	Error: value < 1 Warning: value < 5
% Shared Pool Used	The percentage of shared pool in use. Used to alarm to indicate a high percentage of shared pool used.	Error: value > 95% Warning: value > 90%
% Sessions Active	The percentage of sessions that are active. Used to determine a high number of active sessions as a percentage of the maximum number of sessions.	Error: value > 95% Warning: value > 90%

The User Activity table provides the state of each logged-in user session.

User Activity		
Property	Description	Default Alarm Limits
DB User	The database user name.	
OS User	The operating system user name.	
Host	The host name where the user's client application is running.	
PID	The process id of the user's client application.	
Logon Time	The date and time that the user logged into the database.	
Lock Wait	The address of the lock that the user is waiting for.	
Last Command	The last SQL command executed by the user, if it is still cached.	

4.9.2 User Tracked

This section monitors specific users by database user name to determine if and how many times they are logged in. This could be useful, for example, for security purposes.

Property	Description	Default Alarm Limits
DB User	The database user name.	
Logons	The number of sessions that the user has active.	

4.9.3 User Cursors

This table specifies the number of cursors that can be allocated for each user session. It is possible that a user application requires many cursors, so this object will monitor whether a user is "close" to exhausting its maximum number of cursors.

Property	Description	Default Alarm Limits
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DB User	The database user name.	
OS User	The operating system user name.	
Host	The host name where the user's client application is running.	
PID	The process id of the user's client application	
Unallocated	The number of cursors that can still be allocated by the user. The thresholds should be set so that the DBA is notified when an application may run out of cursors.	Error: value < 1 Warning: value < 5

4.9.4 User Statistics

This section displays CPU, memory, and I/O usage for each user session.

Property	Description	Default Alarm Limits
DB User	The database user name.	
OS User	The operating system user name.	
Host	The host name where the user's client application is running.	
PID	The process id of the user's client application	
CPU	The amount of CPU time used (in units of 100ths of a second)	
PGA (KB)	The session's PGA size in Kbytes.	
Phys Reads	The number of operating system I/O requests to read database blocks.	
Phys Writes	The number of operating system I/O requests to write database blocks.	

4.10 Alert Logs

This section allows matching of known error patterns in the Oracle in the alert log file. For example, Oracle internal errors are logged to the alert log as variants of the string "ORA-00600"; any occurrences of such strings are monitored. As a result, the alert log is actively and continuously monitored for significant messages. Note, if the PrimeAlert for Oracle is not running on the same host as the database instance, no information will be provided in this section.

All Alert Logs have the following tables defined.

The File Identification table provides basic information on the alert log file.

File Identification		
Property	Description	Default Alarm Limits
File Name	The full pathname of the alert log file being scanned for errors.	
File Scanning Mode	The mode used to scan the file. The file can be scanned in three possible modes: <ul style="list-style-type: none"> - Tail – only match on newly added lines - Incremental – match on the current contents of the file and also on newly added lines - Full – scan the entire file each time 	
File Naming Mode	The mode used to specify the name of the file to be monitored. PrimeAlert for Oracle always uses the Static mode. The Dynamic mode is used when the log file being scanned changes name periodically.	

The File Statistics table provides statistical information on file modification.

File Statistics		
Property	Description	Default Alarm Limits

File Size (Bytes)	The size of the file in Bytes.	
File Size (Lines)	The number of lines in the file.	
Growth Rate (Lines/min)	The number of lines added to the file per minute. Thresholds should be used to determine how fast a file is growing or shrinking. Typically, a healthy database has a growth rate of 0.	
Modification Time	The date and time the file was last modified.	
Idle Time	The time (in minutes) passed since last modification.	

The Patterns table displays the default patterns that are monitored in the alert log. Patterns may be edited, added, deleted and disabled dynamically. The patterns are grouped based on functionality.

Patterns		
Property	Description	Default Alarm Limits
Description	The short description of the pattern.	
Matches	The number of pattern matches found in the file	

4.10.1 General Errors

This section monitors the alert log for various problems in the database instance. This includes significant ORA-, SQL-, and DBA- errors. The following error patterns are monitored.

Pattern	Description	Default Alarm Limits
Total Errors	Matches messages in the log file which are prefixed with "ORA, SQL, DBA, EXP, IMP, PLS, LCC, FRM, IAP, TNS".	Warning: Matches > 0
Processes Exceeded	Matches operation requests that exceed the maximum number of processes allowable.	Info: Matches > 0
Oracle Exceptions	Matches Oracle server sessions that are in an unrecoverable state.	Error: Matches > 0
Snapshot too Old	Matches queries that are unable to reconstruct a snapshot of blocks due to the unavailability of rollback data.	Info: Matches > 0
Unable to Extend Rollback Segment	Matches when a rollback segment could not be extended.	Error: Matches > 0
Concurrent Transactions Exceeded	Matches operation requests that exceed the maximum number of concurrent transactions allowable.	Info: Matches > 0
Block Corrupted	Matches blocks that are corrupted.	Error: Matches > 0
Too Many Database Links	Matches instances when the number of active connections to remote databases per user login are reached.	Info: Matches > 0
Out of Process Memory	Matches when no more process memory is available.	Error: Matches > 0
Unable to Allocate Shared Memory	Matches when no more shared memory is available.	Error: Matches > 0
Operating System Exception	Matches generic operating system exceptions.	Error: Matches > 0

4.10.2 Archive and Recovery Errors

This section monitors patterns to detected problems with archive logs and the archiver process.

Pattern	Description	Default Alarm Limits
Archiver Hung	Matches on errors received by the ARCH process when attempting to archive a redo log file	Error: Matches >0
Archive Log: Error Writing	Matches on I/O errors during archiving a redo log file.	Error: Matches > 0

4.10.3 Control File Errors

This section monitors patterns that detected problems with control files. Such as errors with access, I/O, format, and content.

Pattern	Description	Default Alarm Limits
Unable to Create	Matches when the control file cannot be created.	Warning: Matches > 0
Incompatible Version	Matches instances where the version of the control file does not match the version of Oracle.	Warning: Matches > 0
File has errors in alert log	Matches reports of the file name involved in other messages.	Warning: Matches > 0
Wrong Files	Matches instances where the mount ID in the control file is different than the mount ID in the control file used by the first instance to mount the database	Warning: Matches > 0
Error Reading	Matches disk read-failures occurring when trying to read a specific control file.	Warning: Matches > 0
Error Identifying	Matches instances when the system is unable to find the control file.	Warning: Matches > 0
Error Writing	Matches disk write-failures occurring when trying to read a specific control file.	Warning: Matches > 0
Not for Same Database	Matches instances where the database ID in the control file is different than the database ID in the control file used by the first instance to mount the database	Warning: Matches > 0
Unable to Open	Matches instances when the system is unable to open the control file.	Warning: Matches > 0
Does not Match Previous Versions	Matches instances where the control file is from another database.	Warning: Matches > 0
Inconsistent with File	Matches the use of inconsistent sets of control files, redo logs and data files.	Warning: Matches > 0
Must be at Least One	Matches instances when the control file is not specified or cannot be found.	Warning: Matches > 0
Unable to determine Physical Block Size	Matches instances when an error occurred while determining the physical block size of the specified control file	Warning: Matches > 0
Block Size Inconsistent	Matches inconsistencies between the block size of the control file and the physical block size of the OS.	Warning: Matches > 0
Created with Different Physical Size	Matches differences in the physical block sizes in the control file header and that reported by the OS.	Warning: Matches > 0
Larger than Maximum	Matches instances when the size of the control file is larger than the internal maximum allowable.	Warning: Matches > 0
Not Mounted by First Instance	Matches instances where the mount ID of the control file differs from other control files being mounted.	Warning: Matches > 0
Error on Write	Matches errors occurring while writing to one or more control files.	Warning: Matches > 0
Not a Control File	Matches instances where the file specified in the initialization parameter is not a control file	Warning: Matches > 0

4.10.4 Server Lock Errors

This section monitors for errors that may occur with lock resources such as enqueues.

Pattern	Description	Default Alarm Limits
Enqueue O/S Error	Matches OS errors when getting an Oracle enqueue	Warning: Matches > 0
Enqueue Resources Exceeded	Matches operation requests that exceed the maximum number of enqueue resources allowable.	Error: Matches > 0
Enqueue Exceeded	Matches operation requests that exceed the maximum number of queued requests allowable.	Error: Matches > 0
DML Locks Exceeded	Matches operation requests that exceed the maximum number of DML locks allowable.	Error: Matches > 0
Temporary Table Locks Exceeded	Matches instances when the number of temporary tables equals or exceeds the number of temporary table locks.	Error: Matches > 0

4.10.5 Oracle File Errors

This section monitors patterns that detected problems with accessing files (e.g. due to I/O errors).

Pattern	Description	Default Alarm Limits
IO Error Writing Block to File	Matches IO errors received when writing to an Oracle file.	Warning: Matches > 0
IO Error Reading Block from File	Matches IO errors received when attempting to read an Oracle file.	Warning: Matches > 0

4.10.6 Server Session Errors

This section monitors patterns to detected problems with session licensing.

Pattern	Description	Default Alarm Limits
Sessions Exceeded	Matches operation requests that exceed the maximum number of sessions allowable.	Info: Matches > 0
Session Licenses Exceeded	Matches errors returned when all licenses are in use.	Warning: Matches > 0

4.11 Listener Log Errors

This section actively and continuously monitors the listener log file for significant TNS errors codes. For example, Protocol Adapter Errors are logged to the listener log file as variants of the string "TNS-12600". Note, if PrimeAlert for Oracle is not running on the same host where the listener log file resides, no information will be provided.

Pattern	Description	Default Alarm Limits
Listener Failed to Start a Dedicated Server Process	Matches when no additional dedicated server process could be started	Error: Matches > 0
Protocol Adapter Error	Matches protocol adapter errors.	Error: Matches > 0
Packet Reader Error	Matches packet reader errors.	Error: Matches > 0
Packet Writer Error	Matches packet writer errors.	Error: Matches > 0
Lost Contact	Matches messages related to the listener losing contact with a client,	Error: Matches > 0