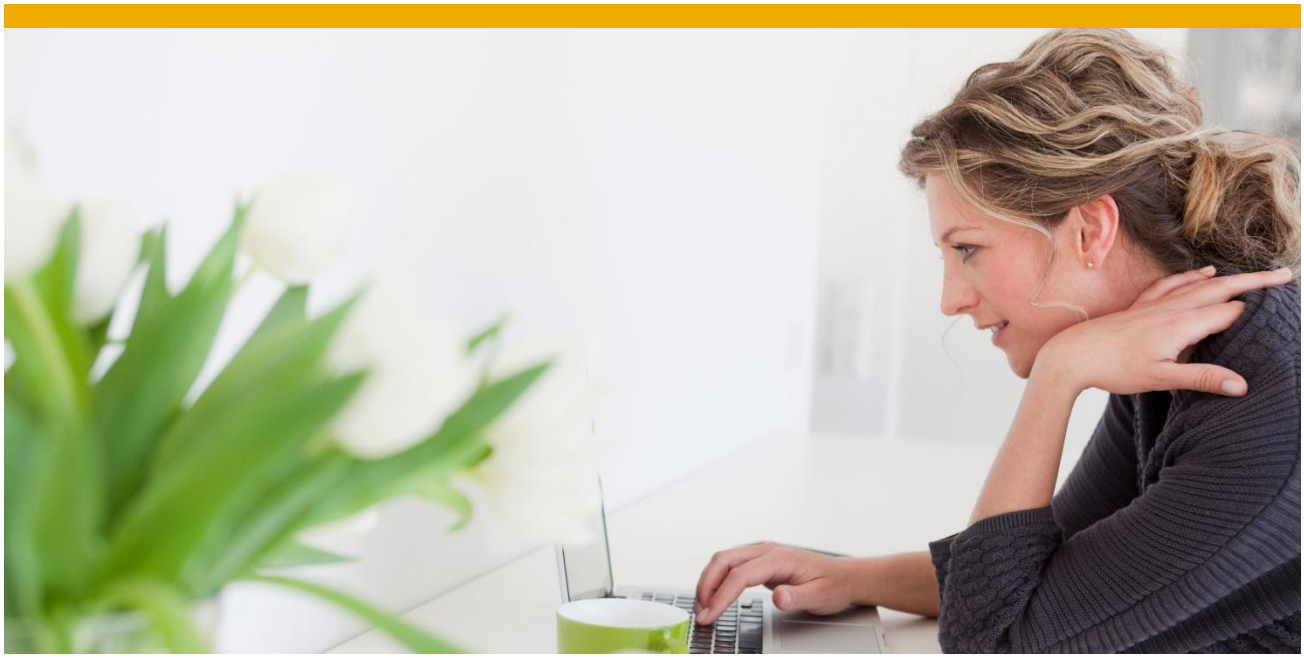

Oracle Database Monitors and Tools

White Paper: Oracle Database Administration

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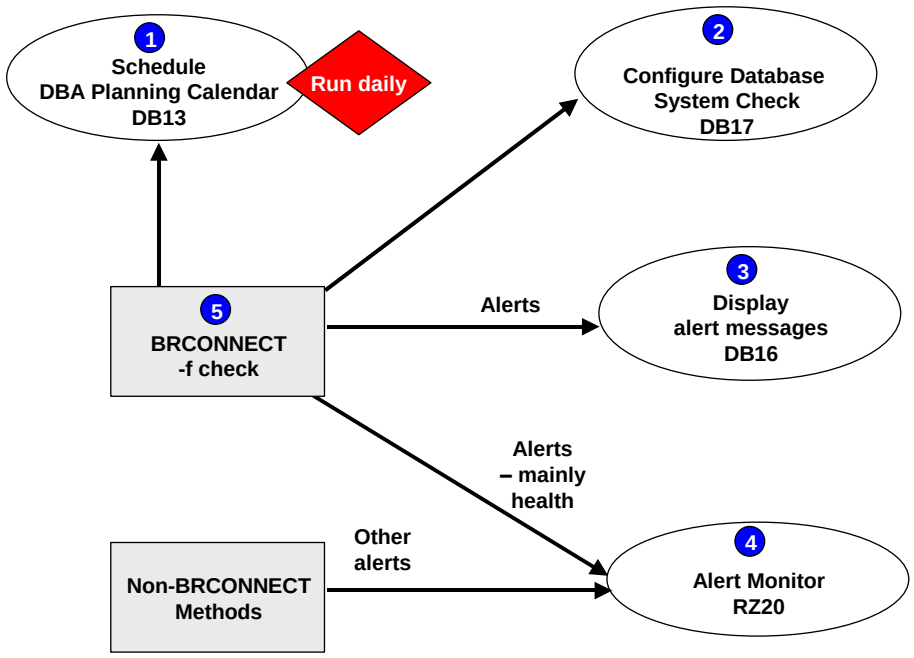
OVERVIEW

To help you quickly recognize and analyze Oracle database problems, SAP provides comprehensive and fully integrated database system checking. By running regular checks and looking at the results, you can rapidly identify potential problems and take the required action before the database crashes.

The following graphic shows how the SAP system supports you in monitoring your Oracle database system:



In this paper we discuss the main functions in the figure above:

1. You schedule the database system check to run daily using the Database Planning Calendar [page 4], transactions DBCOCKPIT and DB13, in the Computing Center Management System (CCMS).
2. If required, you can configure the database system check [page 5] using transactions DBCOCKPIT and DB17.
3. When BRCONNECT has run, you can view the results [page 7] using transactions DBACOCKPIT and DB16.
4. You can also view the results of the BRCONNECT and other checks using the database alert monitor [page 9] in transaction RZ20. Transactions DBACOCKPIT and DB13 deliver the results immediately to the alert monitor.
5. BRCONNECT [page 27] is the program that performs a series of database system checks, including those for database administration, database operations, critical database messages in the Oracle alert file, and incorrectly set database parameters. It is fully integrated with the alert monitor.

Using a case study [page 23], we show you how to add a new condition to the database system check and view this in the alert monitor.

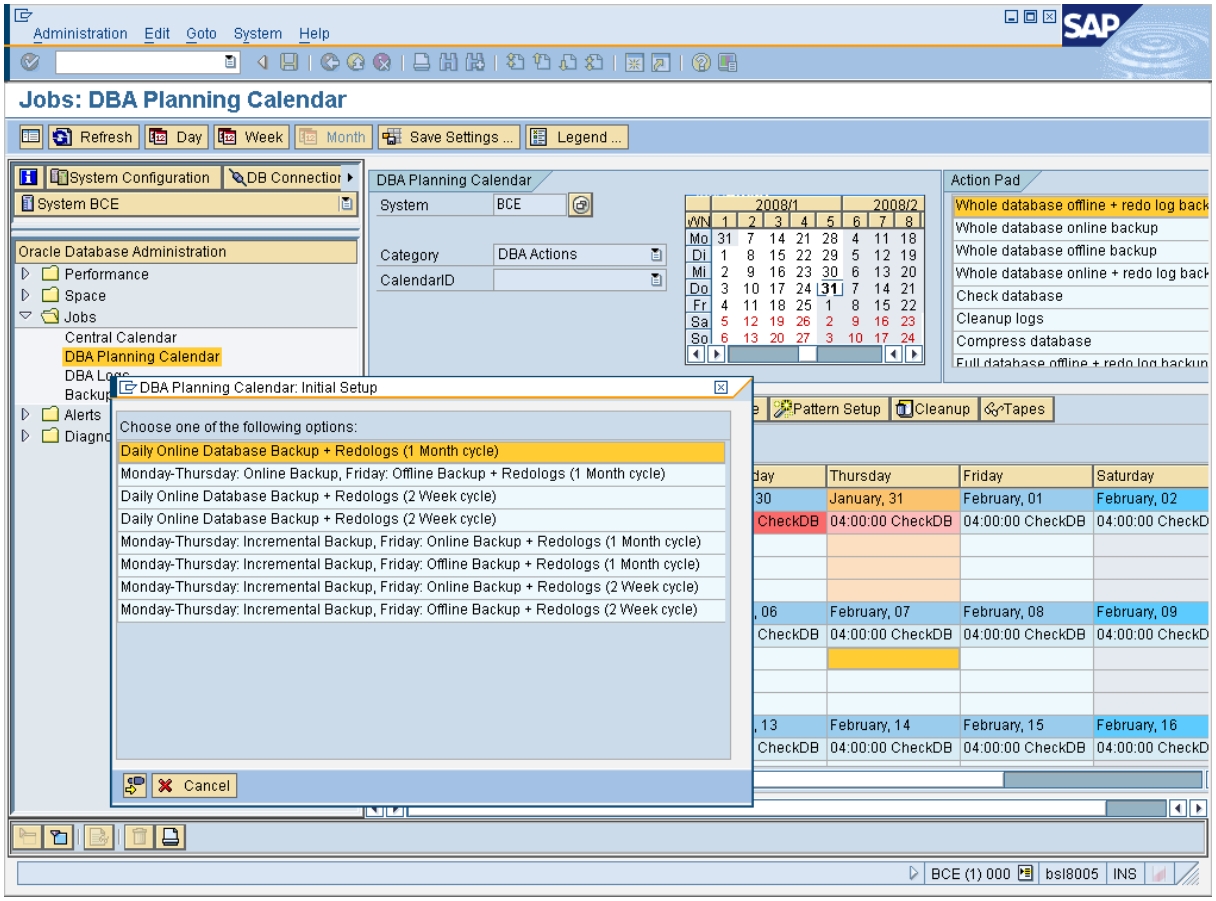
If you want to find more detailed information, look at the additional documentation [page 31] provided by SAP.

SCHEDULING THE DATABASE SYSTEM CHECK

You can schedule the Oracle database system check in the Database planning Calendar in transaction DBACOCKPITof the Computing Center Management System (CCMS).

We strongly recommend you to schedule the check **daily**. Otherwise, you might miss important warnings and errors, possibly resulting in expensive system downtime.

The best way to do this is by selecting an action pattern, as shown in the following graphic:



Every action pattern includes a **daily** database system check. If required, you can run a database system check **immediately** using the DBA Planning Calendar.

You can also run the database system check from the command line of your operating system using **`brconnect -u / -c -f check`**.

For more information on scheduling the database system check, see *DBA Planning Calendar (Oracle)* in the documentation *CCMS Oracle* [page 31].

CONFIGURING THE DATABASE SYSTEM CHECK

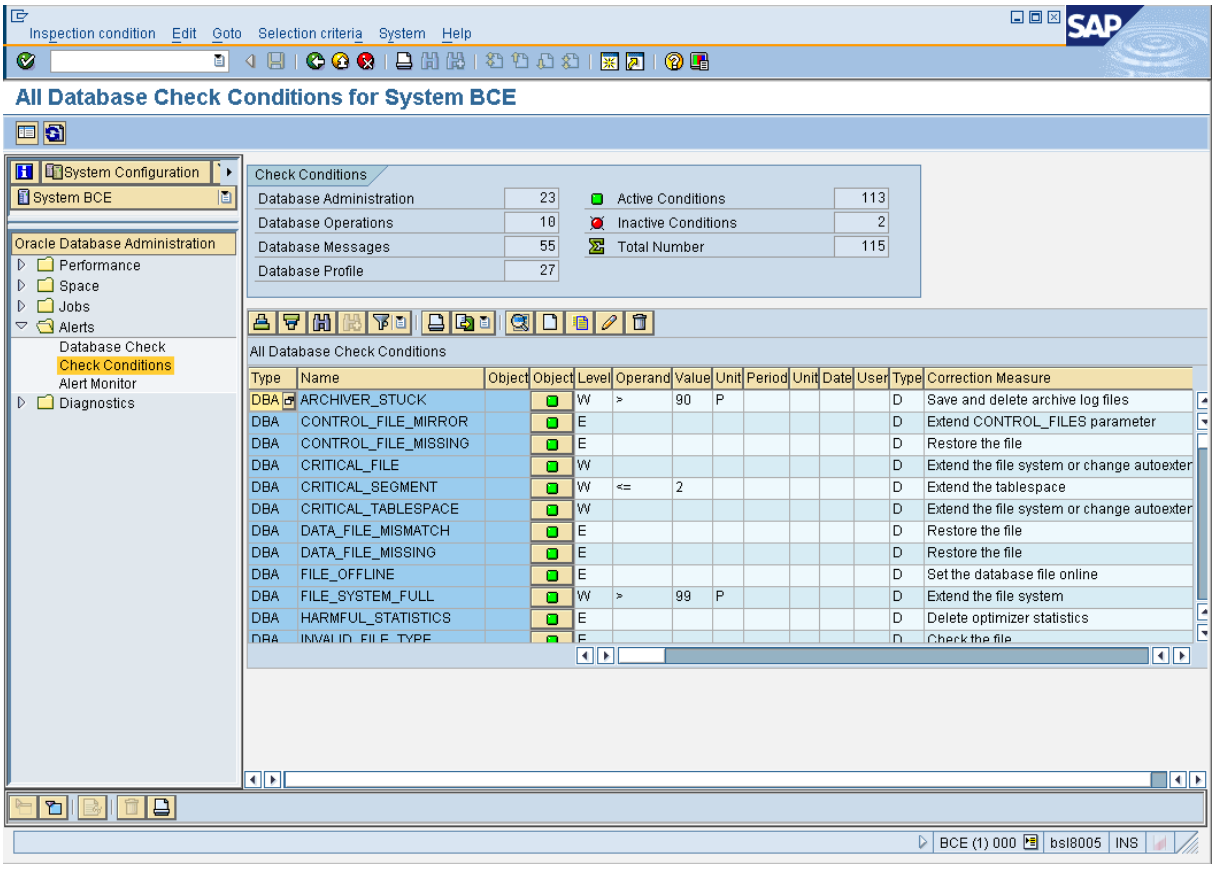
You can configure the Oracle database system check in the Computing Center Management System (CCMS) to:

- Add new conditions of type ORA or PROF
- Exclude individual conditions from the check
- Specify threshold values for the conditions
- Create object-specific conditions to exclude them from the check
- Create object-specific conditions to set individual threshold values
- Specify corresponding corrective actions
- Maintain the condition description

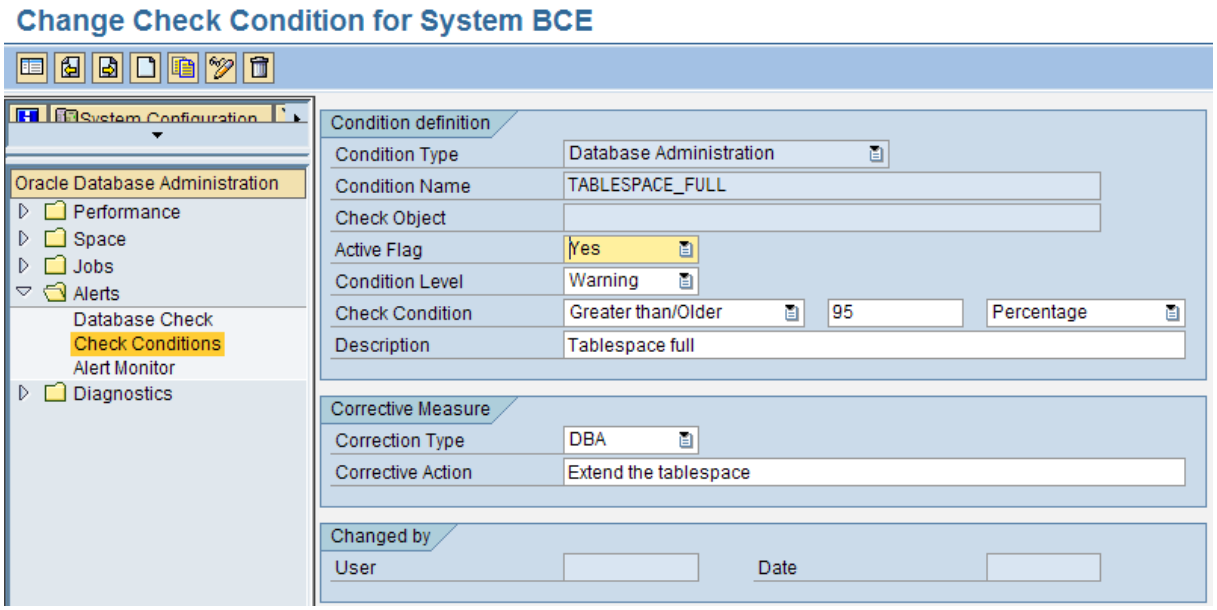
For an example of how to add a new condition of type ORA, see the case study [page 23].

The configuration data is stored in the `DBCHECKORA` table. Changed or new conditions take effect the next time that BRCONNECT runs. You can view the results in transaction DBACOCKPIT or DB16 [page 7] or the alert monitor [page 9].

To change the configuration, you use transaction DBACOCKPIT or DB17, as shown in the following graphic:



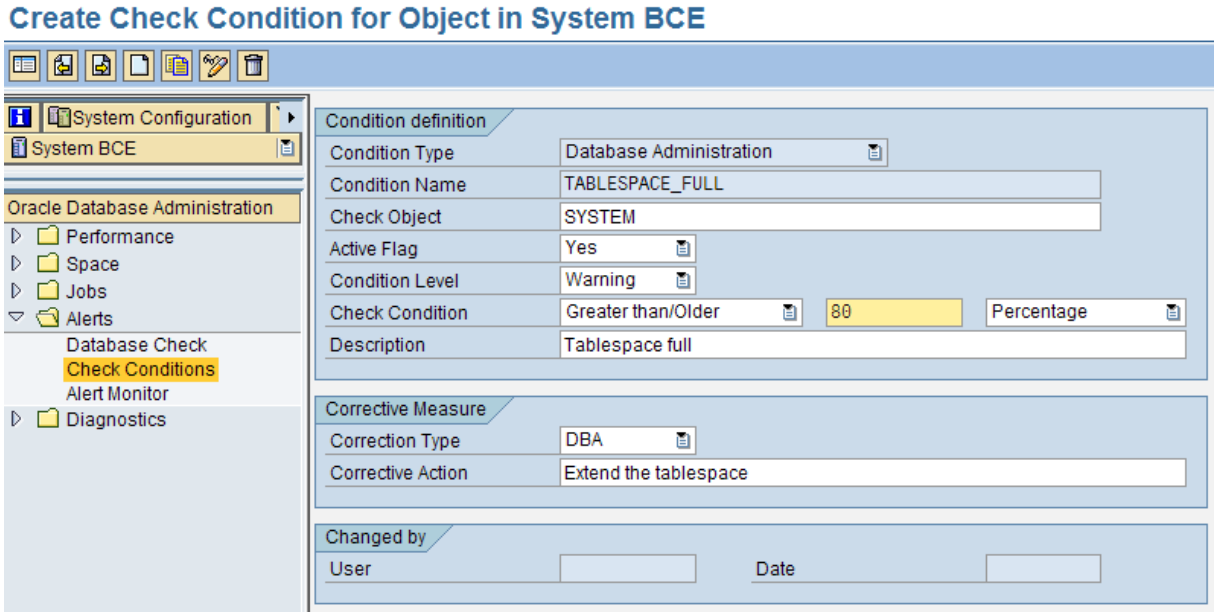
For example, if you want to change the *TABLESPACE FULL* parameter above, you can do so as follows:



In the above example, we have changed the threshold at which an alert is raised for a tablespace to 95%.

You might also decide to change the *Condition Level* from *Error* to *Warning*, deactivate the check by setting the *Active Flag* to *No,* or change the text of the *Description*.

In the following example, we have changed the threshold for a single tablespace, the SYSTEM tablespace, from 95% to 80%, by specifying SYSTEM in the Check Object field. To do this, you first need to copy the condition and then specify *Check Object* for the new condition.

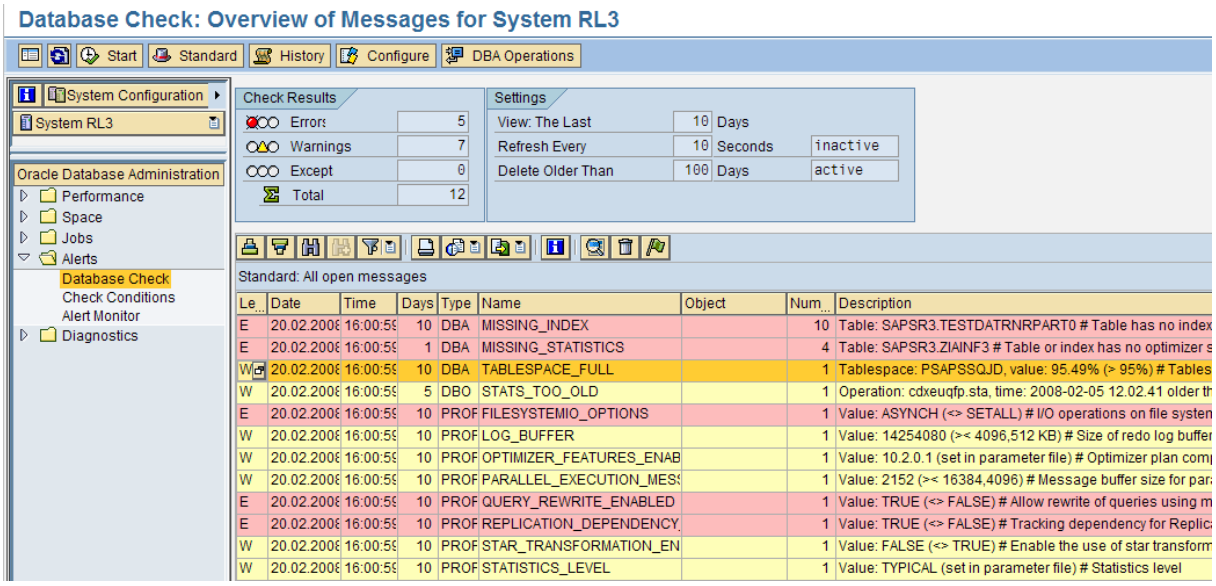


For more information on configuring the database system check, including changing or creating check conditions, see the following path in the documentation *CCMS: Oracle* [page 31]:

Database System Check → Configuring Database System Check (Oracle)

VIEWING THE DATABASE SYSTEM CHECK

To check the results of a database check you use transaction DBACOCKPIT or DB16:



At the top of the screen, the system displays:

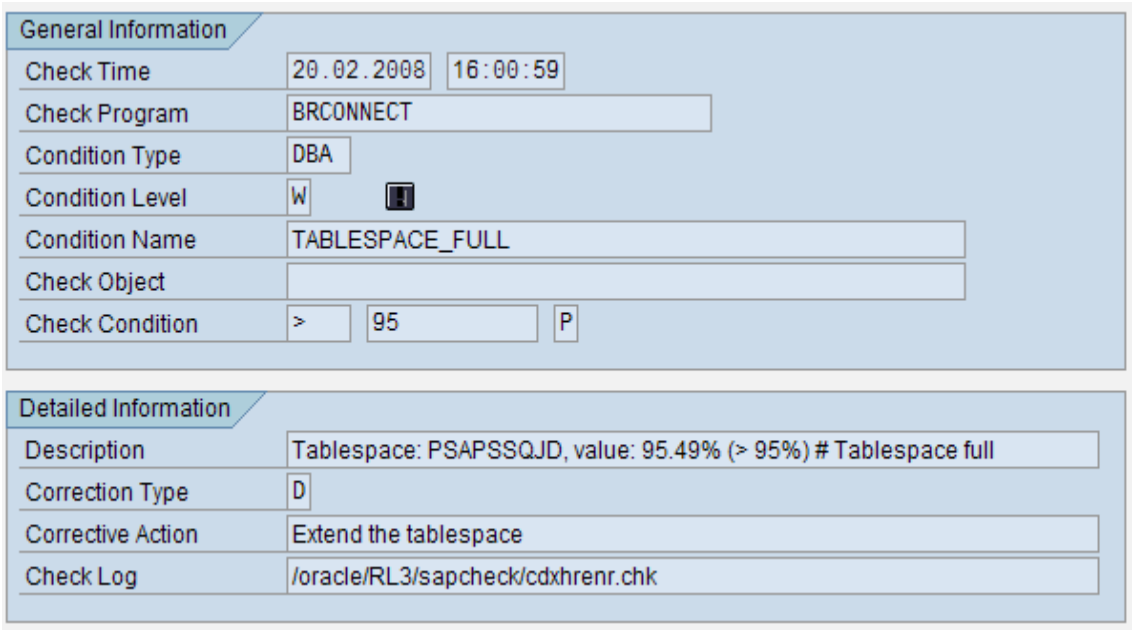
- *Check Results:* the number of checks that have finished with an alert. An alert is an error, a warning, or an exception (that is, a deviation from the SAP standard value).
- *Settings:* the period of results displayed, the refresh interval, and the deletion period

You can configure the display to set the:

- Number of days for which alerts are displayed
- Refresh interval after which the display is updated
- Deletion period after which old alerts are deleted

You can also drill down to look at the details of an individual check or *Message*.

For example, to look in detail at the line *TABLESPACE_FULL* above:



You can choose *Check log* to view the log produced by this check. An example of the log is shown in the case study [page 23].

For more information on viewing the database system check, see the following path in the documentation *CCMS: Oracle* [page 31]:

Database System Check → Displaying Alert Messages from Database System Check

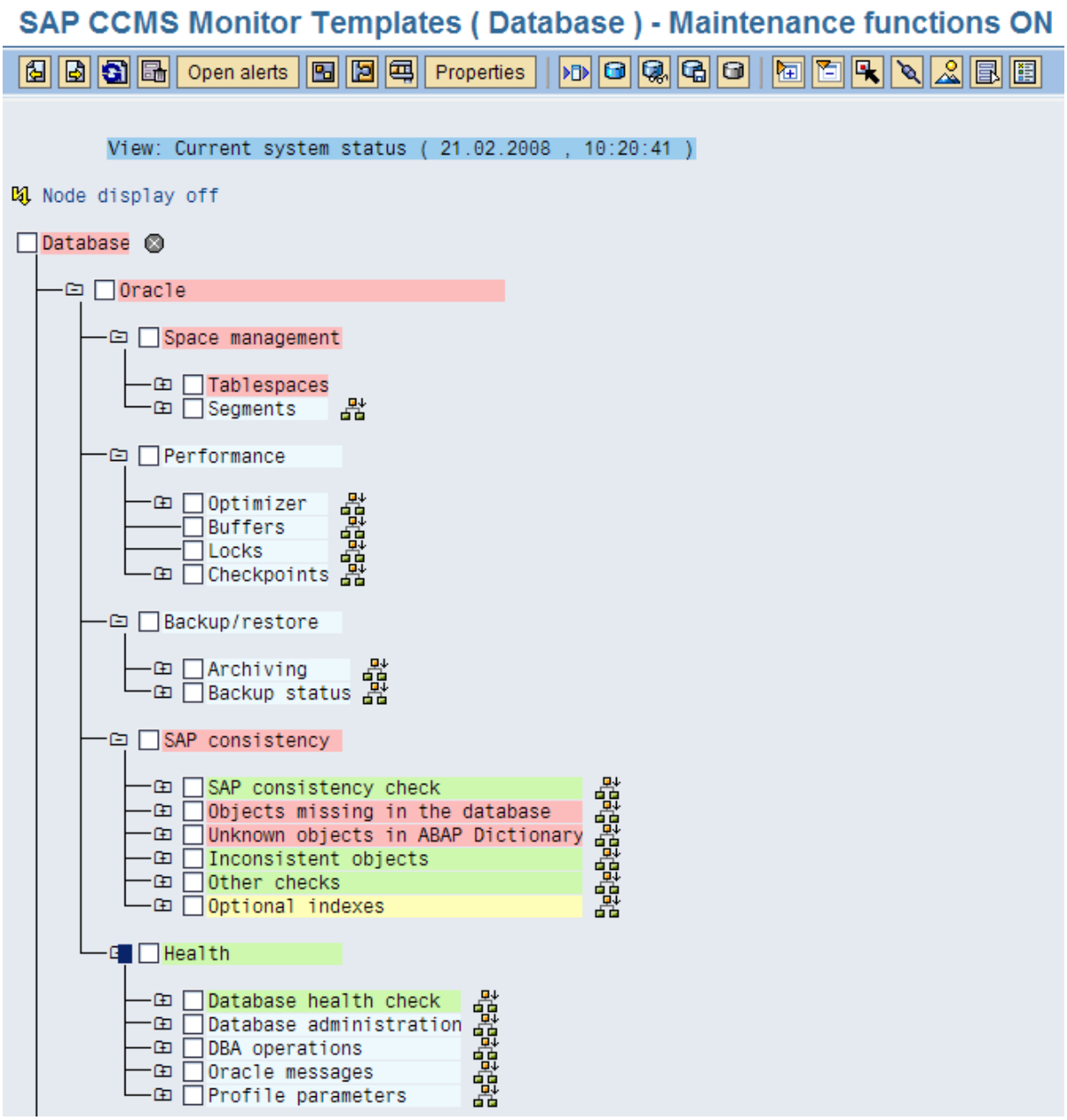
USING THE ALERT MONITOR

You use the alert monitor in the Computing Center Management System (CCMS) to check the following Oracle database functions:

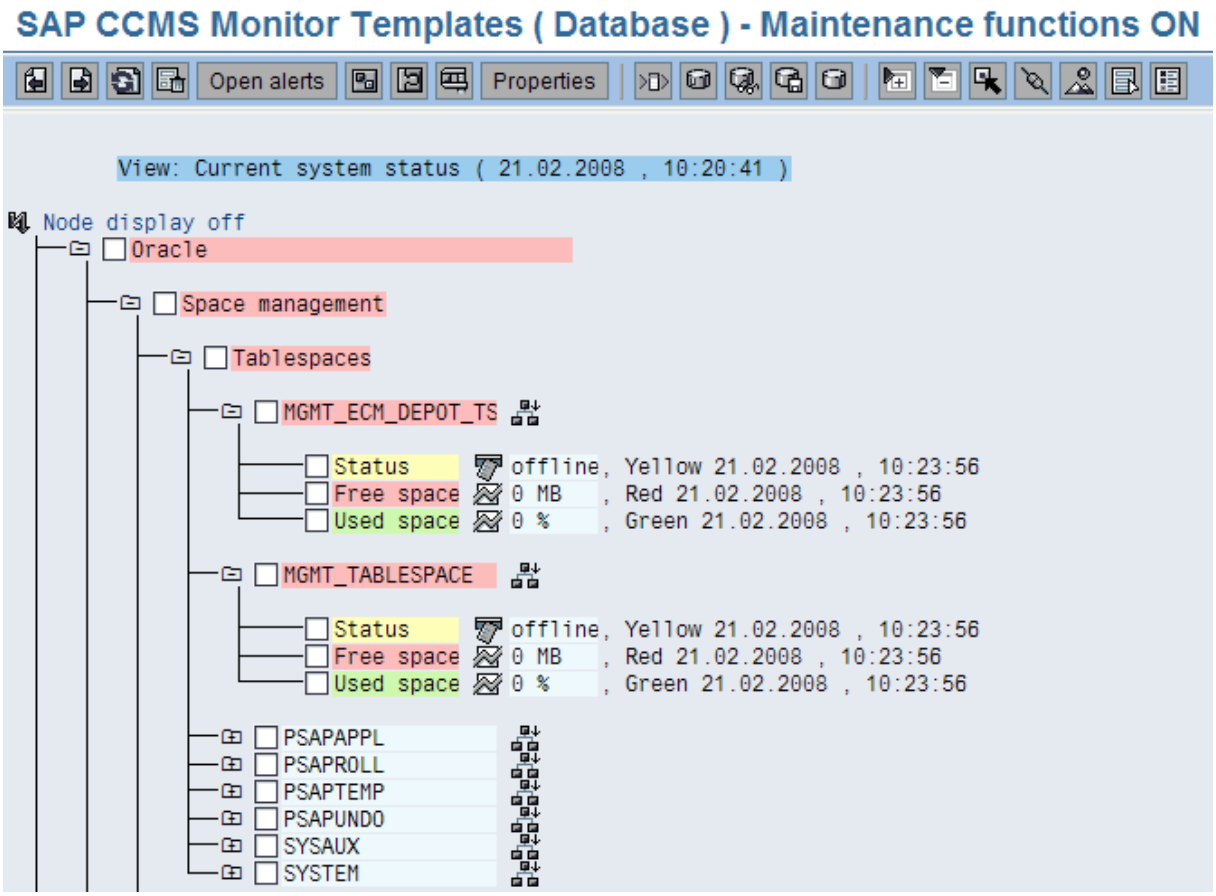
- Space management – tablespaces and segments
- Performance – optimizer statistics, buffers, logs, and checkpoints
- Backup or restore – database and redo log backup
- Consistency – between database objects in the ABAP and Oracle dictionaries
- Health – database system checks from BRCONNECT

By configuring data collection tools, or methods, to run periodically, alerts are automatically updated and fed to the monitoring architecture. The main tool feeding alerts is BRCONNECT [page 27], especially for *Health* alerts. Analysis tools provide additional information about the alert conditions, and you can configure auto-react tools to automatically respond when an alert occurs.

The alerts are hierarchically arranged and grouped. This is what you see when you open the alert database monitor tree in transaction RZ20:

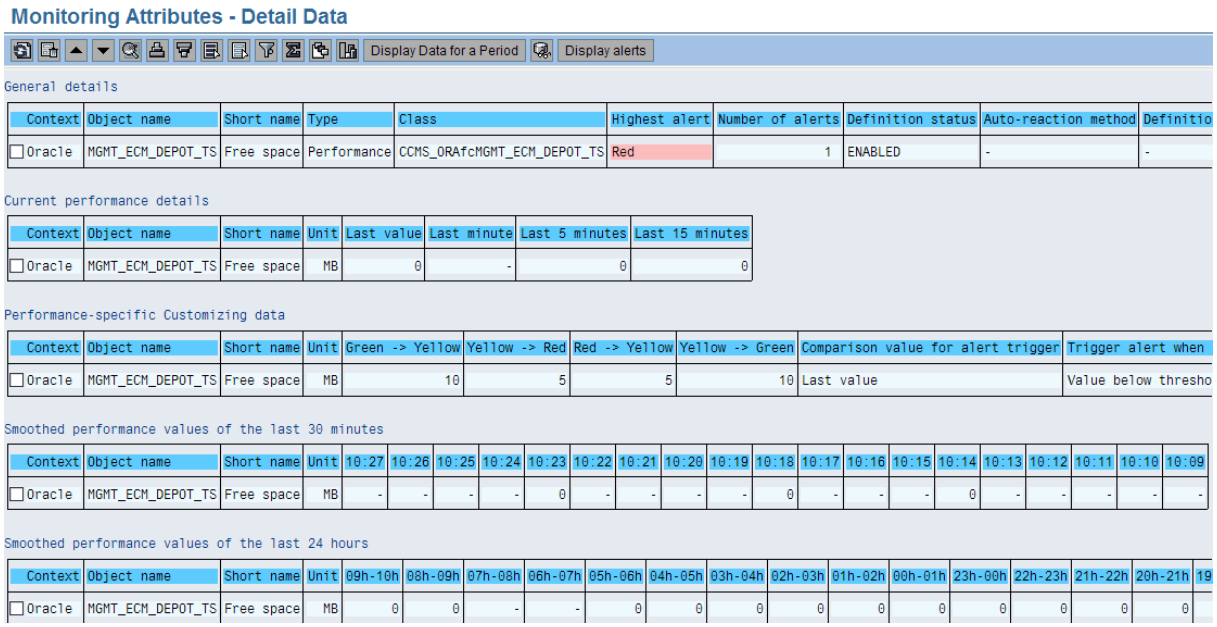


If you choose *Space Management* → *Tablespaces* and open some of the nodes, you see the following:



This level displays individual database checks, some derived from BRCONNECT, some not. Color-coding and the message text indicate whether there is an alert. If an alert has occurred, the message text gives more information.

You can look at the details of an alert, such as *Space management* → *Segments* → *Most allocated extents in any segment*:



Monitoring Attributes - Detail Data

Display Data for a Period | Display alerts

General details

Context	Object name	Short name	Type	Class	Highest alert	Number of alerts	Definition status	Auto-reaction method	Definitio
Oracle	MGMT_ECM_DEPOT_TS	Free space	Performance	CCMS_ORAfcMGMT_ECM_DEPOT_TS	Red	1	ENABLED	-	-

Current performance details

Context	Object name	Short name	Unit	Last value	Last minute	Last 5 minutes	Last 15 minutes
Oracle	MGMT_ECM_DEPOT_TS	Free space	MB	0	-	0	0

Performance-specific Customizing data

Context	Object name	Short name	Unit	Green -> Yellow	Yellow -> Red	Red -> Yellow	Yellow -> Green	Comparison value for alert trigger	Trigger alert when
Oracle	MGMT_ECM_DEPOT_TS	Free space	MB	10	5	5	10	Last value	Value below thresho

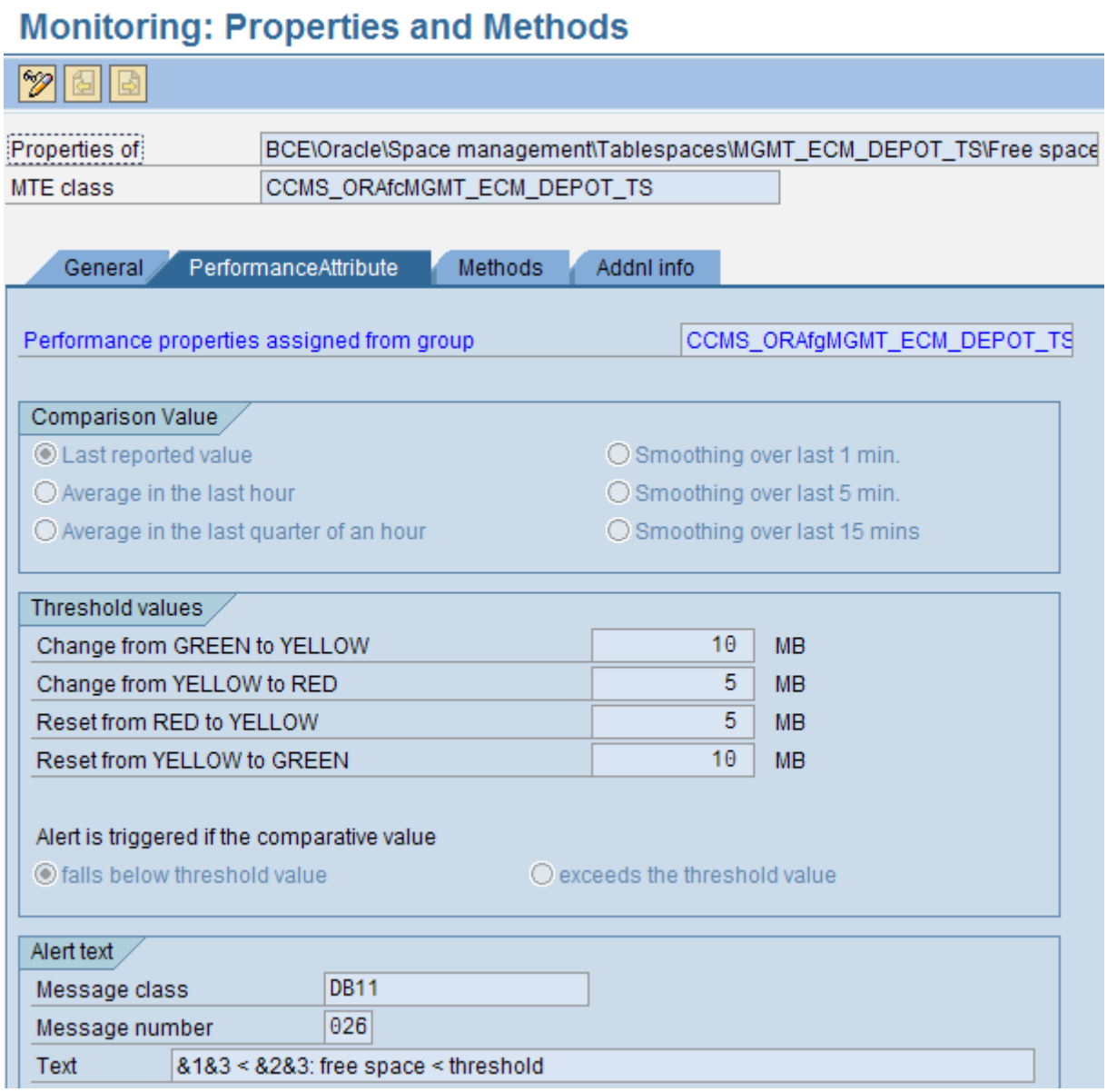
Smoothed performance values of the last 30 minutes

Context	Object name	Short name	Unit	10:27	10:26	10:25	10:24	10:23	10:22	10:21	10:20	10:19	10:18	10:17	10:16	10:15	10:14	10:13	10:12	10:11	10:10	10:09
Oracle	MGMT_ECM_DEPOT_TS	Free space	MB	-	-	-	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-

Smoothed performance values of the last 24 hours

Context	Object name	Short name	Unit	09h-10h	08h-09h	07h-08h	06h-07h	05h-06h	04h-05h	03h-04h	02h-03h	01h-02h	00h-01h	23h-00h	22h-23h	21h-22h	20h-21h	19
Oracle	MGMT_ECM_DEPOT_TS	Free space	MB	0	0	-	-	0	0	0	0	0	0	0	0	0	0	

You can also look at the properties and methods of a node, which determine how the alert is displayed, as follows:



You can alter data collection methods and other attributes such as the threshold values in the monitor.

Database Alerts

This section lists the individual database alerts in the alert monitor by branch of the monitoring tree. The tables below include all possible alerts. You can tailor the tree to suit your own requirements by adding, changing, or deleting alerts.

Space Management

Type	Description
Tablespace	Freespace for each tablespace
	Used space for each tablespace
	Status (online or offline) for each tablespace
Segments	Segments with too few allocatable extents *
	Fewest allocatable extents for a segment *
	Segments approaching `MAX_EXTENTS` *
	Fewest extents left before `MAX_EXTENTS` *
	Most allocated extents in any segment *
	Segments with non-zero `PCTINCREASE` *
	Segments in wrong tablespace
	Rollback segment extension failed

* These alerts are only relevant for locally managed tablespaces.

Performance

Type	Description
Optimizer	Last successful update statistics
	Last brconnect -f stats run
	Harmful statistics
	Missing Statistics
Buffers	Buffer cache
	Library buffer
	Redo log buffer

Locks	Age of oldest exclusive transaction lock
	Deadlocked resource
Checkpoints	Checkpoint not complete

Backup and Restore

Type	Description
Archiving	Last successful archive log backup
	Last brarchive run
	Archiver destination full
	Archiving off
Backup Status	Last successful complete database backup
	Last brbackup run
	Tablespace in backup mode

SAP Consistency

Type	Description
SAP consistency check	Last SAP consistency check run
Objects missing in the database	Primary indexes
	Secondary indexes
	Tables
	Views
Unknown objects in ABAP Dictionary	Database tables
	Database indexes
	Database views
	Database tables without unique index
Inconsistent objects	Primary indexes
	Secondary indexes

	Tables
	Views
Other checks	Primary indexes
	Secondary indexes
	Tables
	Views
	Primary index not unique
Optional indexes	Too many indexes created
	Indexes not created

Health

Type	**Description**
Database health check	Last successful database check
	Last brconnect -f check run
	Last evaluation of check results
	Start of database check
Database administration	Archiver destination full
	Control file not mirrored
	Missing control file
	Critical tablespace
	Critical autoextendable file
	Critical segment
	Data file mismatch
	Missing data file
	Database file offline
	File system full
	Harmful statistics

	Invalid file type
	Segment in wrong tablespace
	Missing index
	Missing statistics
	Database in NOARCHIVELOG mode
	Segment with non-zero PCTINCREASE
	Redo log file not mirrored
	Missing redo log file
	Tablespace full
	Tablespace in backup mode
	Tablespace offline
	Segment with too many extents
DBA operations	Last successful archive log backup too old
	Last successful complete database backup too old
	Last archive log backup failed
	Last complete database backup failed
	Last operation failed
	Last update statistics failed
	Last successful operation too old
	Last successful update statistics too old

Type	Description
Oracle messages	ORA-00060 Deadlock while waiting for resource
	ORA-00255 Error archiving log file
	ORA-00257 Archiver error
	ORA-00270 Error creating archive log
	ORA-00272 Error writing archive log
	ORA-00376 File cannot be read
	ORA-00447 Fatal error in background process
	ORA-00470 LGWR process terminated with error
	ORA-00471 DBWR process terminated with error
	ORA-00472 PMON process terminated with error
	ORA-00473 ARCH process terminated with error
	ORA-00474 SMON process terminated with error
	ORA-00600 Oracle internal error
	ORA-00603 Oracle server session terminated by fatal error
	ORA-01114 I/O error writing database file
	ORA-01115 I/O error reading database file
	ORA-01122 File verification check failed
	ORA-01149 Cannot shut down – data file in backup mode
	ORA-01555 Snapshot too old
	ORA-01562 Failed to extend rollback segment
	ORA-01578 Database block corrupted
	ORA-01628 Max. extents reached for rollback segment
	ORA-01629 Max. extents reached saving undo for tablespace
	ORA-01630 Max. extents reached in temp segment in tablespace
	ORA-01631 Max. extents reached in table

	ORA-01632 Max. extents reached in index
	ORA-01650 Unable to extend rollback segment in tablespace
	ORA-01651 Unable to extend save undo segment for tablespace
	ORA-01652 Unable to extend temp segment in tablespace
	ORA-01157 Unable to extend table in tablespace
	ORA-01654 Unable to extend index in tablespace
	ORA-01655 Unable to extend cluster in tablespace
	ORA-01656 Max. extents reached in cluster
	ORA-01680 Unable to extend LOB segment in tablespace
	ORA-01681 Max. extents reached in LOB segment in tablespace
	ORA-01683 Unable to extend index partition
	ORA-01684 Max. extents reached in table partition
	ORA-01685 Max. extents reached in index partition
	ORA-01688 Unable to extend table partition
	ORA-01691 Unable to extend lob segment in tablespace
	ORA-01692 Unable to extend lob segment partition in tablespace
	ORA-01693 Max. extents reached in lob segment
	ORA-01694 Max. extents reached in lob segment partition
	ORA-07445 Exception encountered: core dump
	ORA-16014 Destination not available for archiving log file
	ORA-16038 Log file cannot be archived
	ORA-19502 Write error on log file
	ORA-19504 Failed to create log file
	ORA-19510 Failed to set size of blocks for file
	ORA-27044 Unable to write the header block of file

	ORA-27072 File I/O error
	ORA-30036 Unable to extend segment in undo tablespace
	Checkpoint not complete – Cannot switch to the next redo log file due to pending checkpoint
	Corrupt block – Database block is corrupted
Profile parameters – Oracle 10g	compatible
	control_file_record_keep_time
	cursor_space_for_time
	db_block_checksum
	db_block_size
	db_files
	db_file_multiblock_read_count
	filesystemio_options
	log_archive_start
	log_buffer
	log_checkpoints_to_alert
	max_dump_file_size
	open_cursors
	optimizer_mode
	parallel_execution_message_size
	parallel_threads_per_cpu
	recyclebin
	remote_os_authent
	replication_dependency_tracking
	shared_pool_size
	star_transformation_enabled
	statistics_level

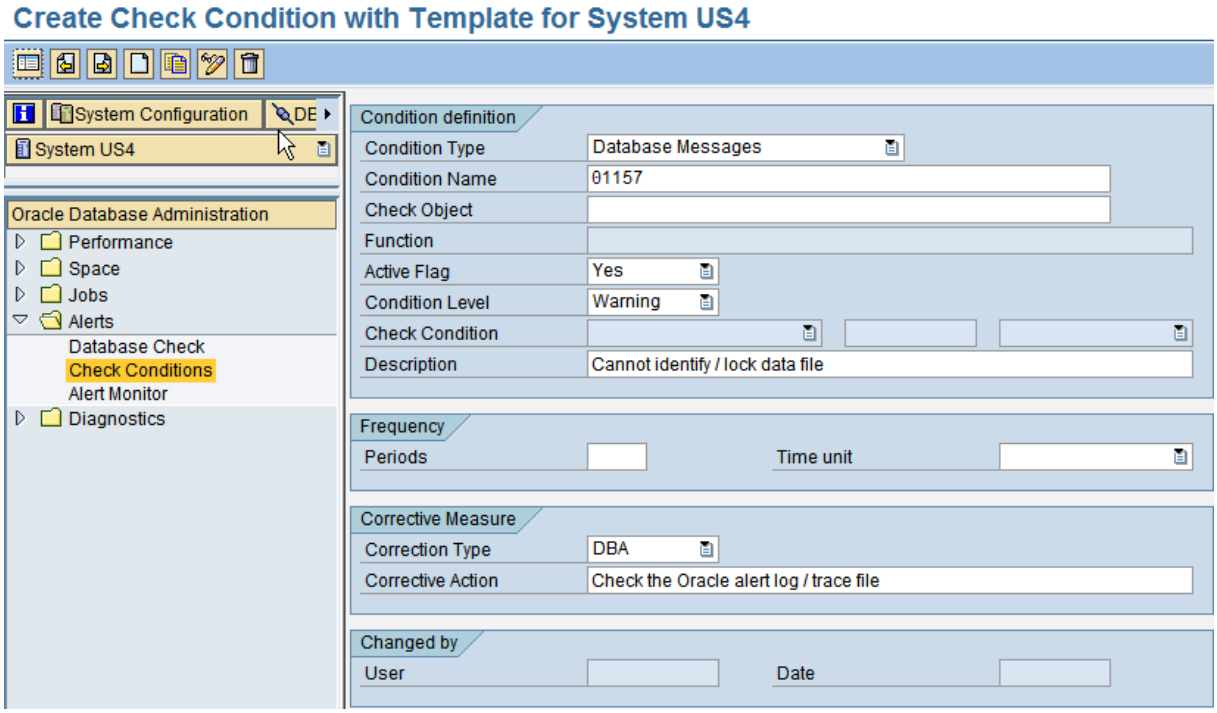
	timed_statistics
	trace_enabled
	undo_management
	undo_tablespace
Profile parameters – Oracle 11g	background_dump_dest
	commit_logging
	commit_wait
	commit_write
	compatible
	control_file_record_keep_time
	core_dump_dest
	db_block_size
	db_files
	db_file_multiblock_read_count
	db_writer_processes
	filesystemio_options
	log_archive_start
	log_buffer
	log_checkpoints_to_alert
	max_dump_file_size
	nls_length_semantics
	open_cursors
	optimizer_dynamic_sampling
	optimizer_features_enable
	optimizer_index_caching
	optimizer_index_cost_adj

	optimizer_mode
	parallel_execution_message_size
	parallel_threads_per_CPU
	query_rewrite_eabled
	recyclebin
	remote_os_authent
	replication_dependency_tracking
	shared_pool_size
	star_transformation_enabled
	statistics_level
	timed_statistics
	trace_enabled
	undo_management
	undo_tablespace
	user_dump_dest

CASE STUDY:
ADDING A NEW CONDITION TO THE DATABASE SYSTEM CHECK

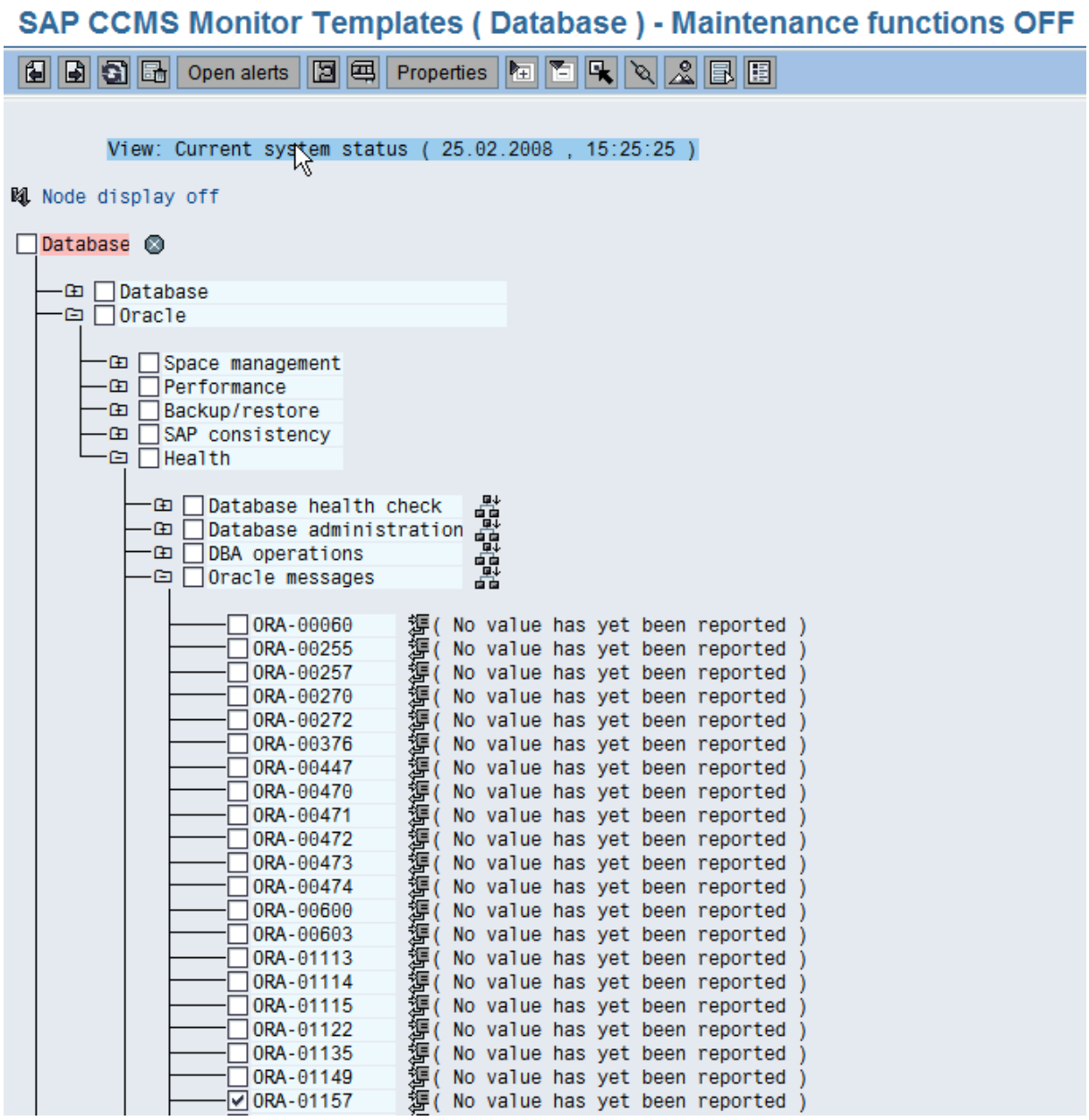
This section shows how you can add a new condition to the database system check and then display the new check. The new condition is a database message – type ORA – but the principle is the same if you want to add a new condition of type PROF.

1. You enter the new condition in transaction DBACOCKPIT or DB17:



   The *Condition Name* is *01157*, which generates an error with the *Cannot identify / lock data file*. The recommendation for this error is to *Check the Oracle alert log / trace file*.

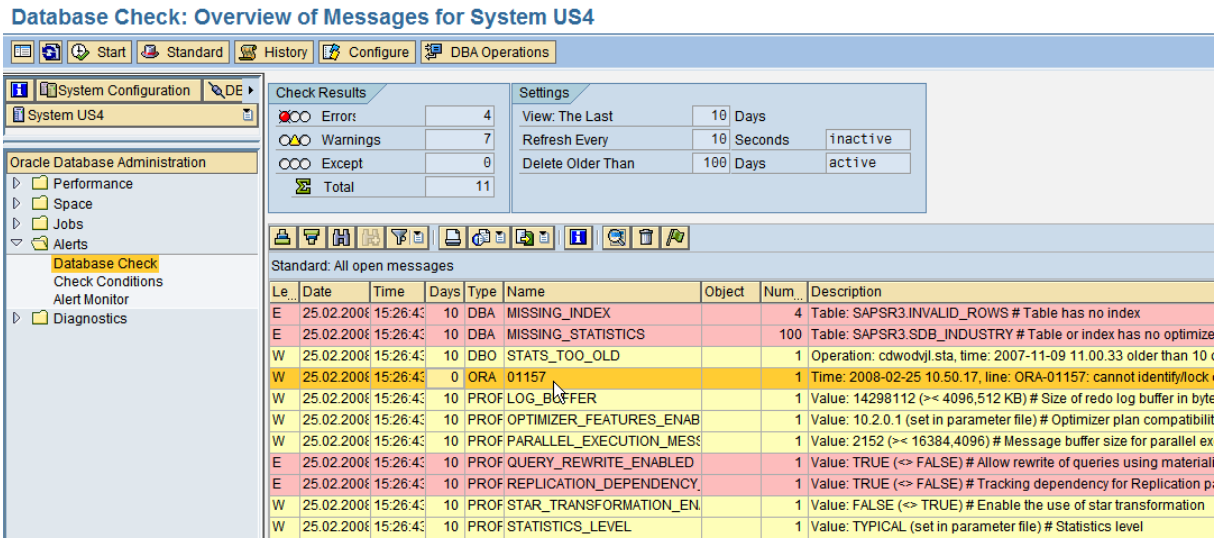
2. Using transaction RZ20 to call up the alert monitor [page 9], you delete and then rebuild the monitoring tree on the host running the SAP central instance:
   a) Activate maintenance functions in *View: Current system status*.
   b) Reset all alerts in the Oracle monitoring tree.
   c) Delete the Oracle monitoring tree.
   d) Run ABAP program RSDBMON0 on the main application server to rebuild the monitoring tree.
3. You call up the alert monitor and see the new check condition, *ORA-01157*:



4. You run a database system check in the DBA Planning Calendar [page 4], either immediately or at the next scheduled time.

   In this example, we assume that the new database check causes an alert.

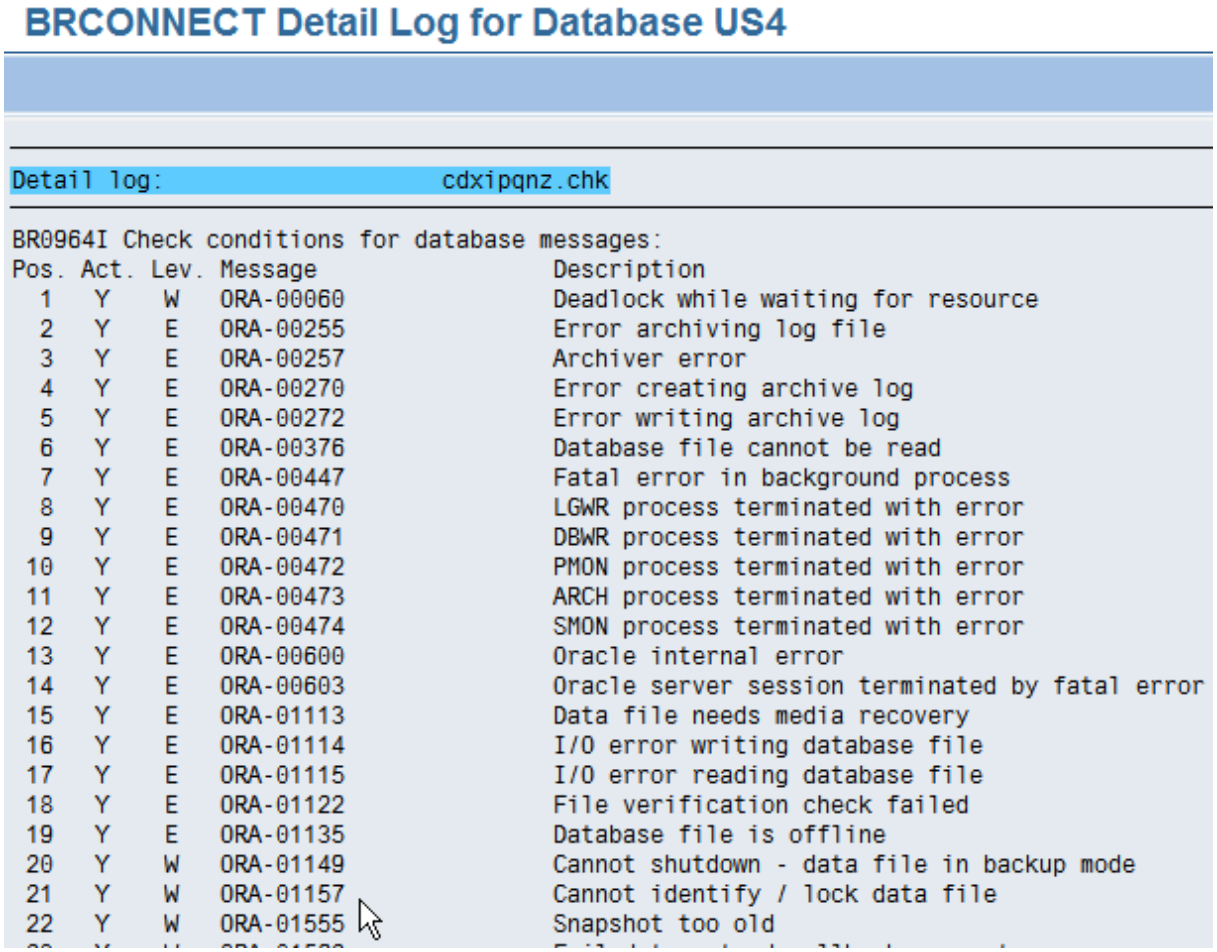
5. You view the results of the database system check [page 7] using transaction DBACOCKPIT or DB16 to see the alert raised by the new condition:



The error *01157* appears in the *Name* column

6. You look at the detail log.

a) You can see the new condition *ORA-01157*:



b) You can also see the alert *ORA-1157* that was raised in this example:

BRCONNECT Detail Log for Database US4

```
Detail log:                    cdxipqnz.chk

BR0970W Database administration alert - level: ERROR, type: MISSING_STATISTICS, object: (index) SAPSR3.WSRM_SEQ_ENQ_TAB~0
BR0970W Database administration alert - level: ERROR, type: MISSING_STATISTICS, object: (index) SAPSR3.WSRM_TXH_WATCHER~0
BR0280I BRCONNECT time stamp: 2008-02-25 15.27.40
BR0972I Checking database operations...
BR0973W Database operation alert - level: WARNING, operation: cdwodvjl.sta, time: 2007-11-09 11.00.33, condition: Last successful
BR0280I BRCONNECT time stamp: 2008-02-25 15.27.40
BR0974I Checking database messages in /oracle/US4/saptrace/background/alert_US4.log ...
BR0976W Database message alert - level: WARNING, line: 86464, time: 2008-02-25 10.50.17, message:
ORA-01157: cannot identify/lock data file 255 - see DBWR trace file
BR0280I BRCONNECT time stamp: 2008-02-25 15.27.40
BR0977I Checking database profile...
BR0978W Database profile alert - level: WARNING, parameter: LOG_BUFFER, value: 14298112 (>< 4096,512 KB)
BR0978W Database profile alert - level: WARNING, parameter: OPTIMIZER_FEATURES_ENABLE, value: 10.2.0.1 (set in parameter file)
BR0978W Database profile alert - level: WARNING, parameter: PARALLEL_EXECUTION_MESSAGE_SIZE, value: 2152 (>< 16384,4096)
BR0978W Database profile alert - level: ERROR, parameter: QUERY_REWRITE_ENABLED, value: TRUE (<> FALSE)
BR0978W Database profile alert - level: ERROR, parameter: REPLICATION_DEPENDENCY_TRACKING, value: TRUE (<> FALSE)
BR0978W Database profile alert - level: WARNING, parameter: STAR_TRANSFORMATION_ENABLED, value: FALSE (<> TRUE)
BR0978W Database profile alert - level: WARNING, parameter: STATISTICS_LEVEL, value: TYPICAL (set in parameter file)
BR0280I BRCONNECT time stamp: 2008-02-25 15.27.40
BR0980I Number of changed database profile parameters: 0
BR0280I BRCONNECT time stamp: 2008-02-25 15.27.42
BR0955I Number of signaled error/warning/exception alerts for database administration: 738/0/0
BR0956I Number of signaled error/warning/exception alerts for database operations: 0/1/0
BR0957I Number of signaled error/warning/exception alerts for database messages: 0/1/0
BR0958I Number of signaled error/warning/exception alerts for database profile: 2/5/0
BR0806I End of BRCONNECT processing: cdxipqnz.chk 2008-02-25 15.27.42
BR0280I BRCONNECT time stamp: 2008-02-25 15.27.42
BR0803I BRCONNECT completed successfully with warnings
```

7. You can also see the alert *ORA-01157* displayed in the alert monitor, transaction RZ20 [page 9]:

SAP CCMS Monitor Templates (Database) - Maintenance functions OFF

Open alerts | Properties

View: Current system status (25.02.2008 , 15:39:02)

- Node display off
  - Oracle
    - Space management
    - Performance
    - Backup/restore
    - SAP consistency
    - Health
      - Database health check
      - Database administration
      - DBA operations
      - Oracle messages
        - ORA-00060 Checked but no warning or error found
        - ORA-00255 Checked but no warning or error found
        - ORA-00257 Checked but no warning or error found
        - ORA-00270 Checked but no warning or error found
        - ORA-00272 Checked but no warning or error found
        - ORA-00376 Checked but no warning or error found
        - ORA-00447 Checked but no warning or error found
        - ORA-00470 Checked but no warning or error found
        - ORA-00471 Checked but no warning or error found
        - ORA-00472 Checked but no warning or error found
        - ORA-00473 Checked but no warning or error found
        - ORA-00474 Checked but no warning or error found
        - ORA-00600 Checked but no warning or error found
        - ORA-00603 Checked but no warning or error found
        - ORA-01113 Checked but no warning or error found
        - ORA-01114 Checked but no warning or error found
        - ORA-01115 Checked but no warning or error found
        - ORA-01122 Checked but no warning or error found
        - ORA-01135 Checked but no warning or error found
        - ORA-01149 Checked but no warning or error found
        - ORA-01157 Check 25.02.2008 15:26:43 - Time: 2008-02-25 10.50.17, line: ORA-01157: cannot identify/lock data file 255
        - ORA-01555 Checked but no warning or error found

BRCONNECT

BRCONNECT checks the following types of condition:

- Database administration – configuration, space management, database state, consistency
- Database operations – backup and archive results, failed operations
- Critical database messages in the Oracle alert file – for example, ORA-00600
- Database profile parameters in the Oracle initialization file

When it finds a critical situation, BRCONNECT writes an alert message to the detail log and to the table `DBMSGORA`. You can view the results with transaction DBACOCKPIT or DB16 [page 7]. Many alerts are also passed to the alert monitor [page 9].

You can tailor the conditions to suit your own requirements [page 5]. For critical database messages or database profile parameters, you can also add new conditions.

Default Conditions for Database Administration

Condition	Severity	Description
`NOARCHIVELOG_MODE`	Error	Checks whether the database is in `NOARCHIVELOG` mode, which is not allowed for production databases.
`ARCHIVER_STUCK`	Warning	Checks the highest fill level of the archiving directory (by default, `oraarch`).
`FILE_SYSTEM_FULL`	Warning	Checks the fill level of file systems on the database host.
`TABLESPACE_OFFLINE`	Error	Checks whether there are tablespaces that are offline.
`TABLESPACE_IN_BACKUP`	Warning	Checks whether there are tablespaces that have the BACKUP status although BRBACKUP is not active
`TABLESPACE_FULL`	Warning	Checks the fill level of tablespaces in the database.
`DATA_FILE_MISSING`	Warning	Checks whether there are data files that no longer exist in the file system.
`REDOLOG_FILE_MISSING`	Error	Checks whether there are online redo log files that no longer exist in the file system.
`CONTROL_FILE_MISSING`	Error	Checks whether there are control files that no longer exist in the file system.
`DATA_FILE_MISMATCH`	Error	Checks whether there are data files that are flagged as `MISSING` in Oracle control file.
`INVALID_FILE_TYPE`	Error	Checks whether there are database files that have an illegal operating system type, for example, block raw files on Unix or compressed files on Windows.

Condition	Severity	Description
REDOLOG_FILE_MIRROR	Error	Checks whether there are online redo log files that are not mirrored on the Oracle side.
CONTROL_FILE_MIRROR	Error	Checks whether there are control files that are not mirrored on the Oracle side.
FILE_OFFLINE	Error	Checks whether there are data files or online redo log files that are OFFLINE.
CRITICAL_FILE	Warning	Examines the data files with an activated auto extend feature to see whether the file system can be brought to overflow, due to the existing parameter setting (NEXT and MAXSIZE), during the automatic file extension.
TOO_MANY_EXTENTS *	Warning	Checks whether there are tables or indices, for which the number of allocated extents exceeds the specified threshold value.
CRITICAL_SEGMENT *	Warning	Checks whether there are tables or indexes that can bring the tablespace to overflow when up to 5 next extents are allocated.
CRITICAL_TABLESPACE	Warning	Examines the data of a tablespace to see whether the file system can be brought to overflow, due to the existing parameter setting (NEXT and MAXSIZE), during the automatic file extension.
IN_WRONG_TABLESPACE	Error	Checks whether there are tables that not in a table tablespace or indices, which are not in an index tablespace.
MISSING_INDEX	Error	Checks whether there are tables that do not have any indices and are not specified in the DBDIFF table exception.
MISSING_STATISTICS	Error	Checks whether there are tables or indices that do not have any statistics, although they should have these.
HARMFUL_STATISTICS	Error	Checks whether there are tables or indices that have statistics, although they should not have these (for example, pool and cluster tables).
PCTINCREASE_NOT_ZERO *	Error	Checks whether there are tables or indexes for which the PCTINCREASE storage parameter is **not** equal to zero. This can lead to storage fragmentation and is not suitable for the SAP System.

* These conditions are only relevant for locally managed tablespaces.

The above check conditions are specified in the control table DBCHECKORA.

You cannot add new check conditions but you can change some of the above checks as follows:

- You can exclude objects – that is, individual tables and indexes or even complete tablespaces – from certain checks that run at table or index level. You do this by creating a new check condition with the relevant object in transaction DBCOCKPIT or DB17 [page 5], setting its *ACTIVE FLAG* to *NO* or by specifying the object in the check_exclude BRCONNECT profile parameter.
- You can change the threshold values for individual tables and indexes

You can change the following check conditions in this way:

TOO_MANY_EXTENTS, CRITICAL_SEGMENT, IN_WRONG_TABLESPACE, MISSING_INDEX, MISSING_STATISTICS, HARMFUL_STATISTICS, PCTINCREASE_NOT_ZERO

Default Conditions for Database Operations

Condition	Severity	Description
LAST_ARCHIVE_FAILED	Warning	Checks whether the last backup of the offline redo log files with BRARCHIVE failed.
LAST_BACKUP_FAILED	Warning	Checks whether the last complete backup of the database with BRBACKUP failed.
LAST_STATS_FAILED	Warning	Checks whether the last update of the optimizer statistics with BRCONNECT failed.
LAST_OPERATION_FAILED	Warning	Checks whether the last DBA operation failed.
ARCHIVE_TOO_OLD	Warning	Checks whether the last successful backup of the offline redo log files with BRARCHIVE is too old.
BACKUP_TOO_OLD	Warning	Checks whether the last successful complete backup of the database with BRBACKUP is too old.
STATS_TOO_OLD	Warning	Checks whether the last successful update of the optimizer statistics with BRCONNECT is too old.
OPERATION_TOO_OLD	Warning	Checks whether the last successful DBA operation is too old.

Since the test conditions for database operations are programmed in a specific way in BRCONNECT (known as built-in test conditions), no new check conditions can be added to the DBCHECKORA table. However, this is generally not necessary because other operations can be monitored by the LAST_OPERATION_FAILED and OPERATION_TOO_OLD check conditions, or by specifying function IDs in the PARAM field.

Critical Database Messages in the Oracle Alert File

See “Oracle Messages” in the table “Health” [Page 16].

You can enter any Oracle error code or error text as a condition name for this condition type. BRCONNECT searches the Oracle Alert log for corresponding Oracle error messages and might then generate alert messages.

BRCONNECT Default Conditions for Database Profile Parameters

These test conditions check the values of Oracle parameters. The standard test conditions for the database profile correspond to the current SAP recommendations described in **SAP Note** 830576 for Oracle 10g and in **SAP Note** 1431798.

You can easily adjust the test conditions for the database profile parameters, depending on the changed recommendations and for new Oracle releases.

ADDITIONAL DOCUMENTATION

SAP Library

You can find more information on Oracle database administration and the contents of this document in the SAP Library as follows:

All paths refer to SAP NetWeaver 7.3.

1. Call up the SAP Help Portal at **help.sap.com/nw73** → *Application Help* → *SAP Library: English*.
2. Choose *SAP NetWeaver Library: Function-Oriented View* → *Database Administration* → *Database Administration for Oracle*.
3. Choose one of the following:
   - *SAP Database Guide: Oracle*
   - *CCMS: Oracle*

You can also find these plus selected extracts from the SAP Library at:

www.sdn.sap.com/irj/sdn/ora → *SAP on Oracle Knowledge Center* → *SAP Documentation in Help Portal*

SAP Notes

You can find more information on the contents of this document in the following SAP Notes:

- **483856** Description of the Alerts for Oracle Database Monitoring
- **426781** Corrections in the Oracle Database Monitoring
- **483659** BRCONNECT Support for Oracle Monitoring in RZ20

You can find SAP Notes at:

service.sap.com/notes

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