DATABASE ADMINISTRATION

Lab 7 – SQL Tuning

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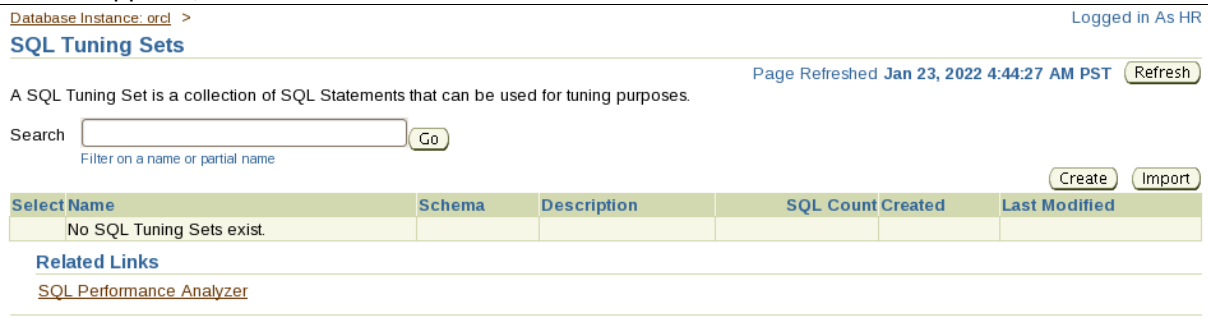
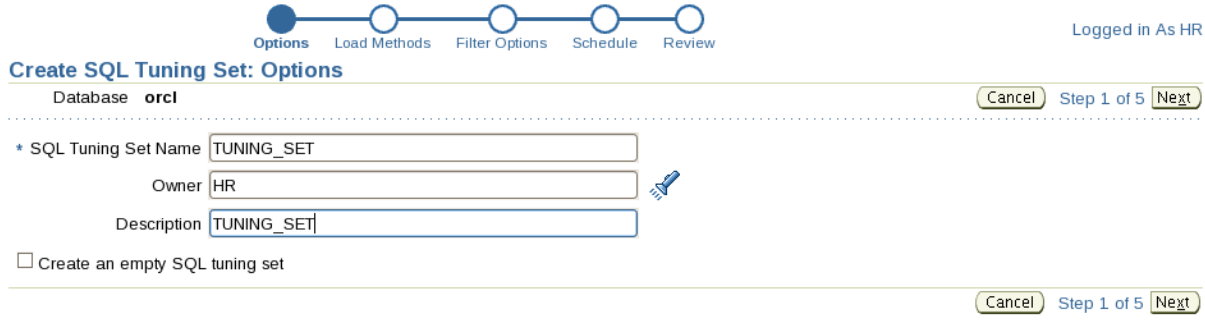
1. Run the SQL Plus tool and log in to the hr user account with the oracle password. If a different password is set for the hr account, then log in to konto sys with dba permissions (sys account password: oracle) and change the password for the account hr using the alter user hr identified by oracle command; .

2. Attention! The following is an example list of SQL commands and an example scenario for performing administrative tasks related to creating SQL Tuning Sets and using SQL Tuning Advisor and SQL Access tools Advisor. The task is to create a Tuning Set for at least 3 commands and run sql Tuning Advisor and SQL Access Advisor tools for these commands. We execute a number of SQL commands. Commands must contain joins, aggregate commands . Example commands: select e.first_name, e.last_name, e.department_id, e.job_id from employees e, departments d WHERE e.department_id = d.department_id AND d.location_id IN (select location_id from locations where city = 'Seattle'); select department_id, min(salary) from employees group by department_id HAVING avg(salary) = (SELECT max(avg(salary)) from employees group by department_id); select first_name, last_name, hire_date from employees WHERE to_char(hire_date, 'DAY') = (select to_char(hire_date, 'DAY') from employees group by to_char(hire_date,'DAY') HAVING count(employee_id) =(select max(count(employee_id)) from employees group by to_char(hire_date, 'DAY')));

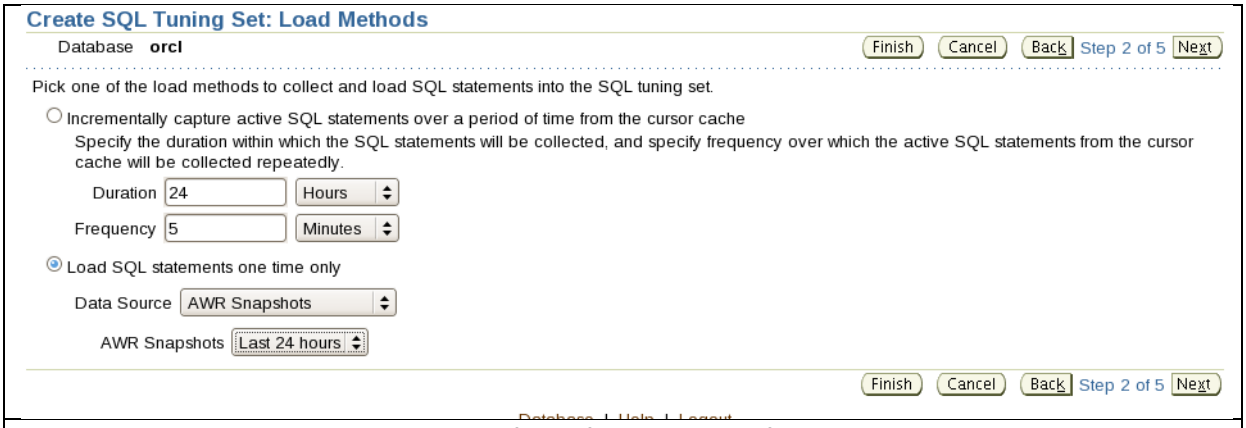
3. Creating SQL Tuning Sets allows you to fine-tune SQL commands. We create datasets, specifically SQL command sets, to better tune SQL commands to work better in a real database operation environment. In order to create a dataset in the Enterprise Manager tool, on the Performance tab in the Additional Monitoring Links section, select the SQL Tuning Sets option. The SQL Tuning Sets window appears, in which we click on the Create button.



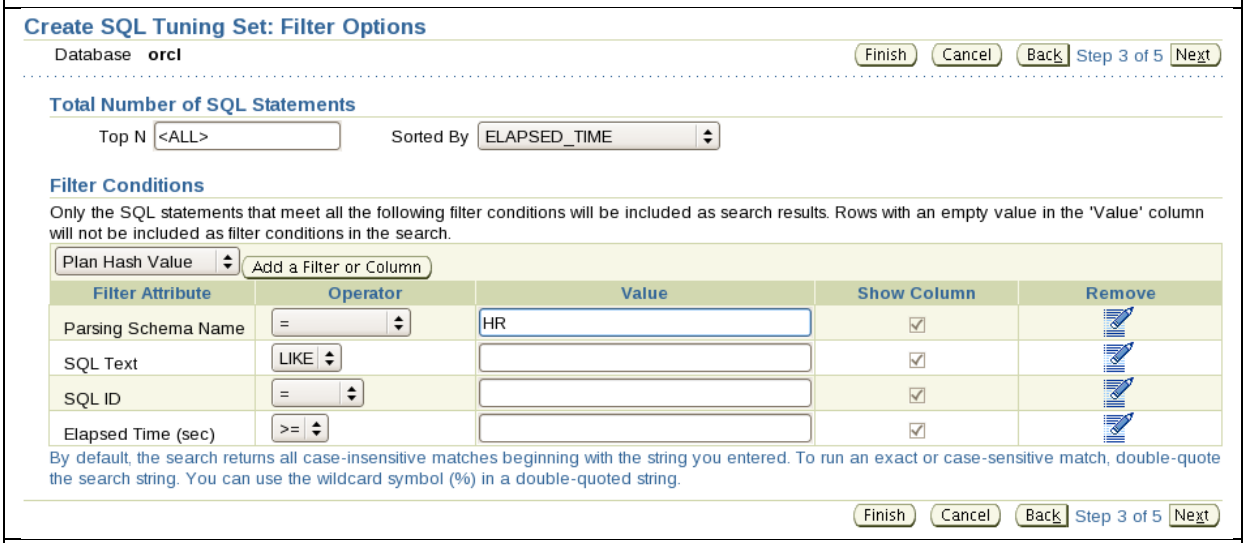
4. A window appears in which in the SQL Tuning Set Name field we enter the name of the new set, while in the Description field we give a description of the set. Then click on the Next button .



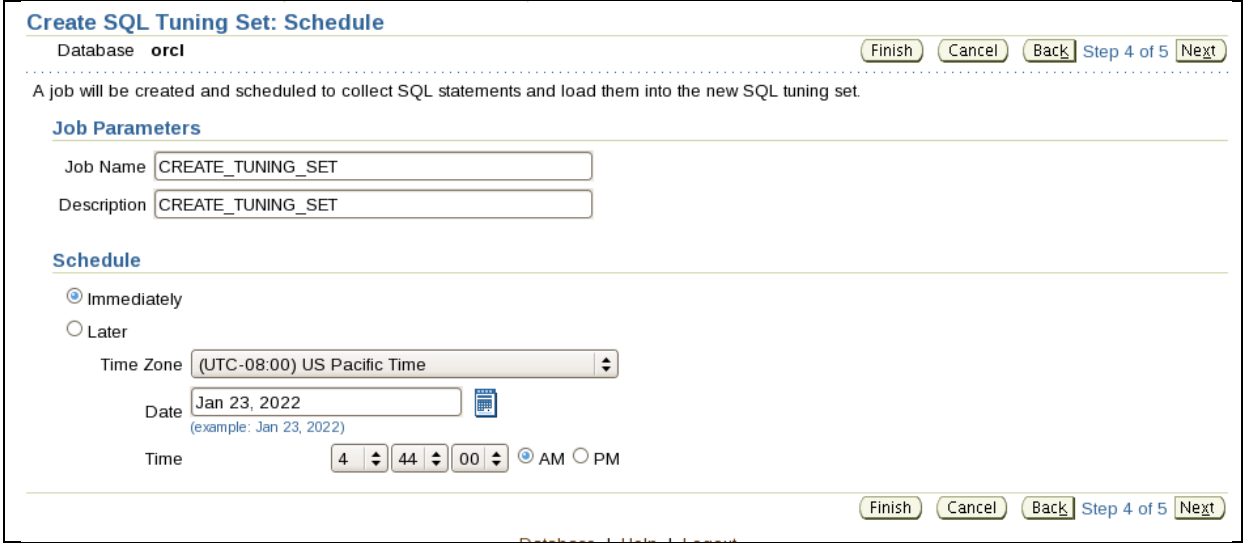
5. A window appears in which we select the Load SQL statements one time only option and select the AWR Snapshots option from the drop-down list. We can leave the default option Last 24 hours specifying the amount of time for which the ADDM snapshots will be used. Then click on the Next button



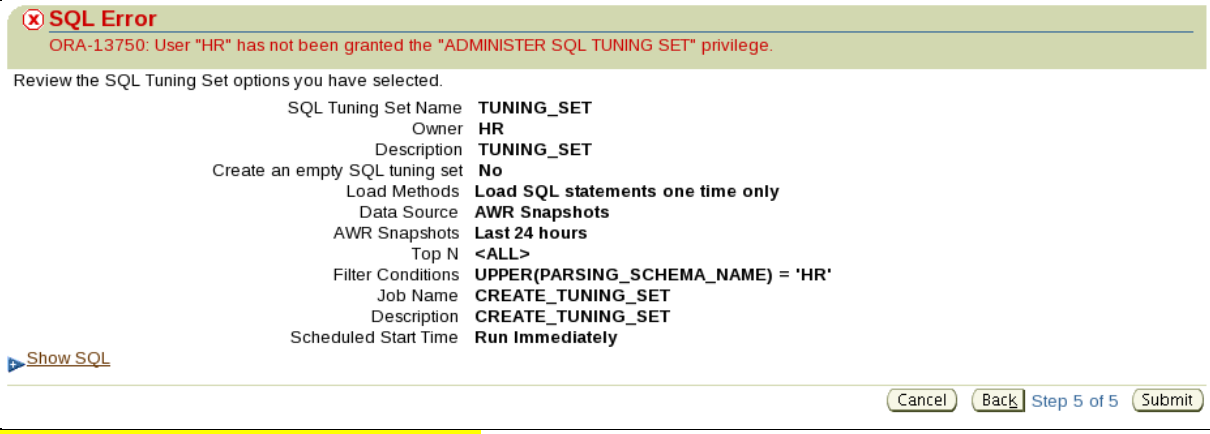
6. A window appears in which you can define a filter that specifies the conditions that must be met by SQL commands that are part of the set. In the Parsing Schema Name row, in the Value column, enter hr. we assume that only HR chematu commands will be included in the set. Then click on the Next button



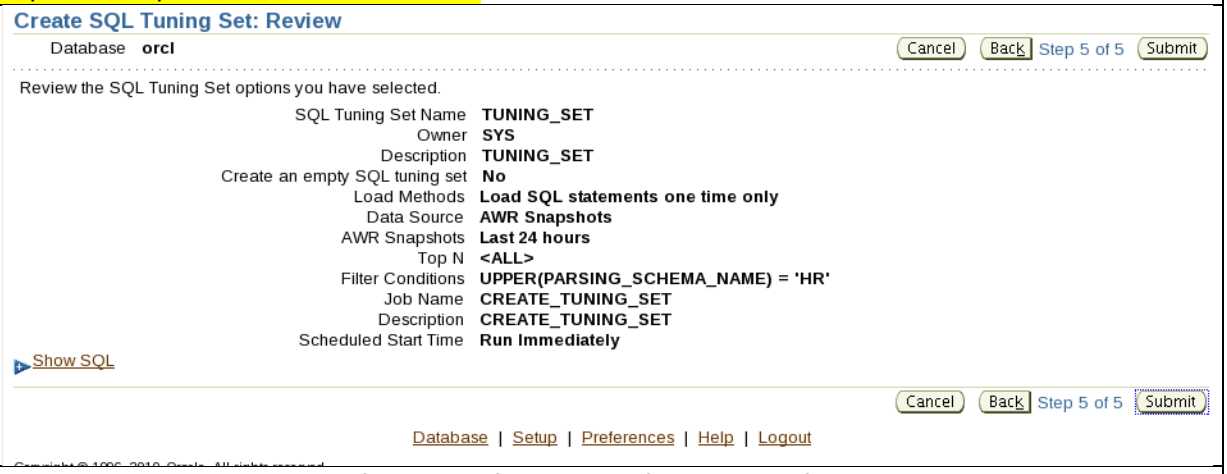
7. A window appears in which in the Job Name field we enter the name of the new task, while in the Description field we give a description of the task. Then we select the Immediately option and click on the Next button



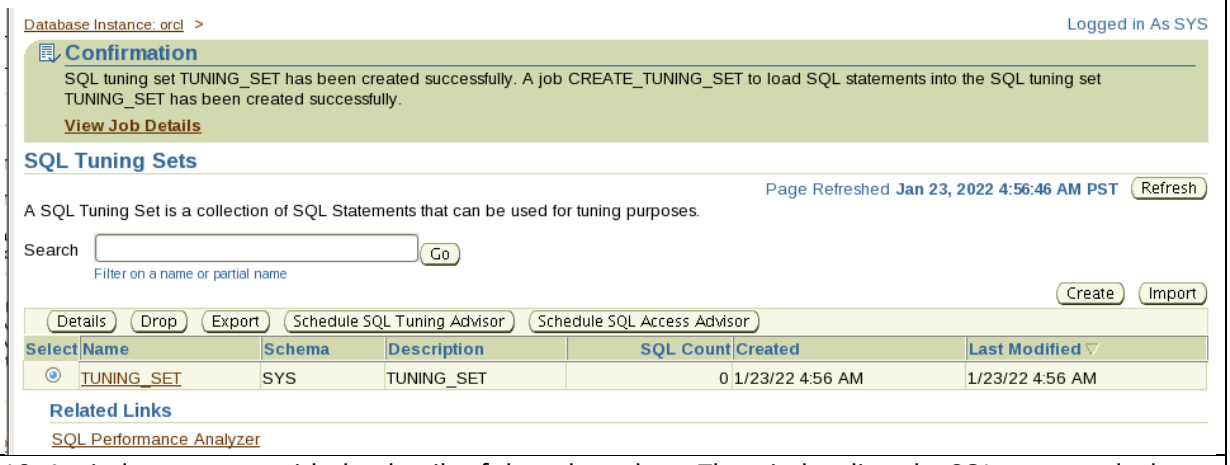
8. A window appears in which we click on the Submit button.



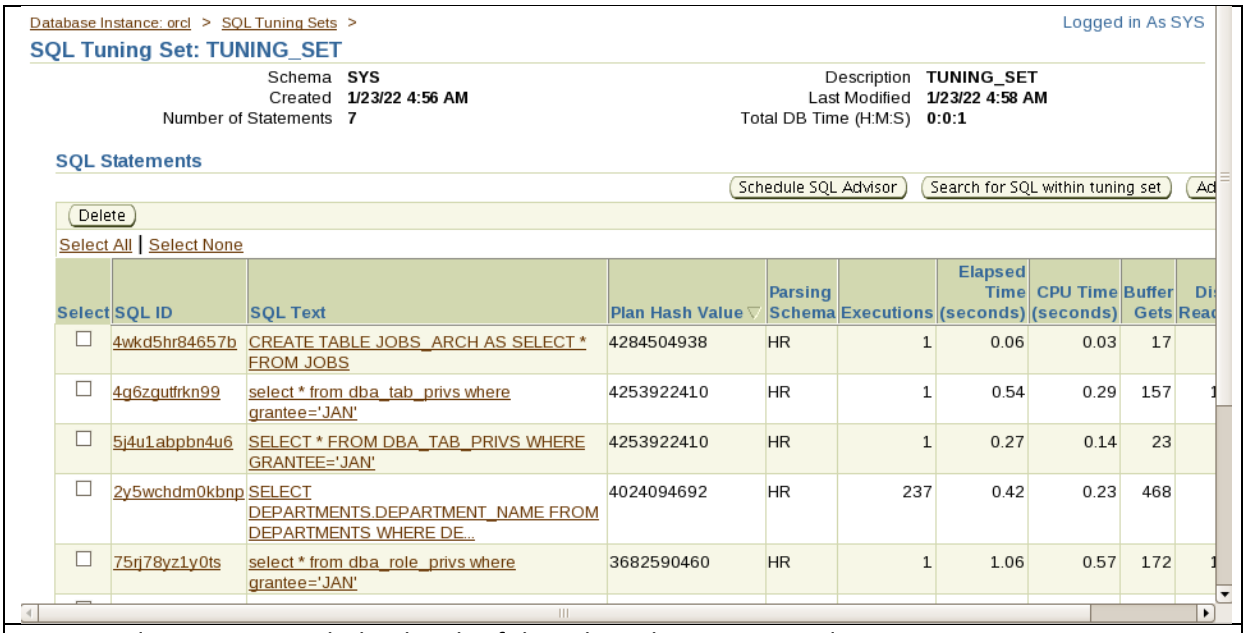
Repeated steps as SYS, because of error.



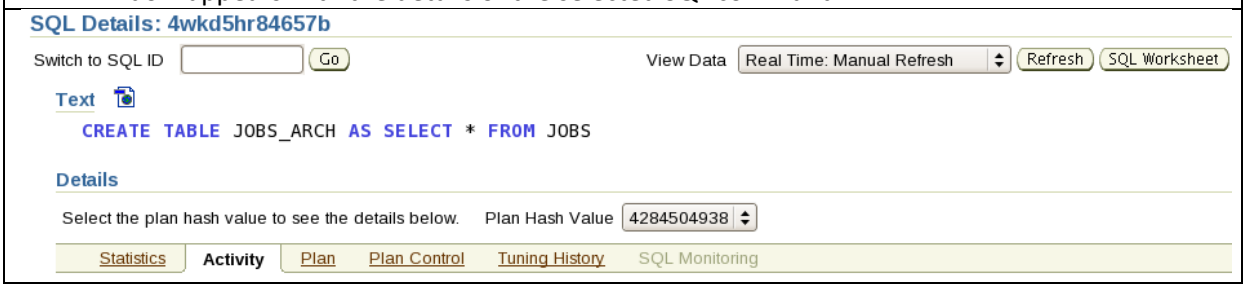
9. A window appears with confirmation of the successful creation of the set. The newly created set appears in the list of available sets. In this window, by clicking on the Drop button, we can remove any set from the list (provided that it was not used by SQL Tuning Advisor or SQL Access Advisor), while selecting Detail s button we can view the details of the selected set. Select the newly created set and click on the Details button.



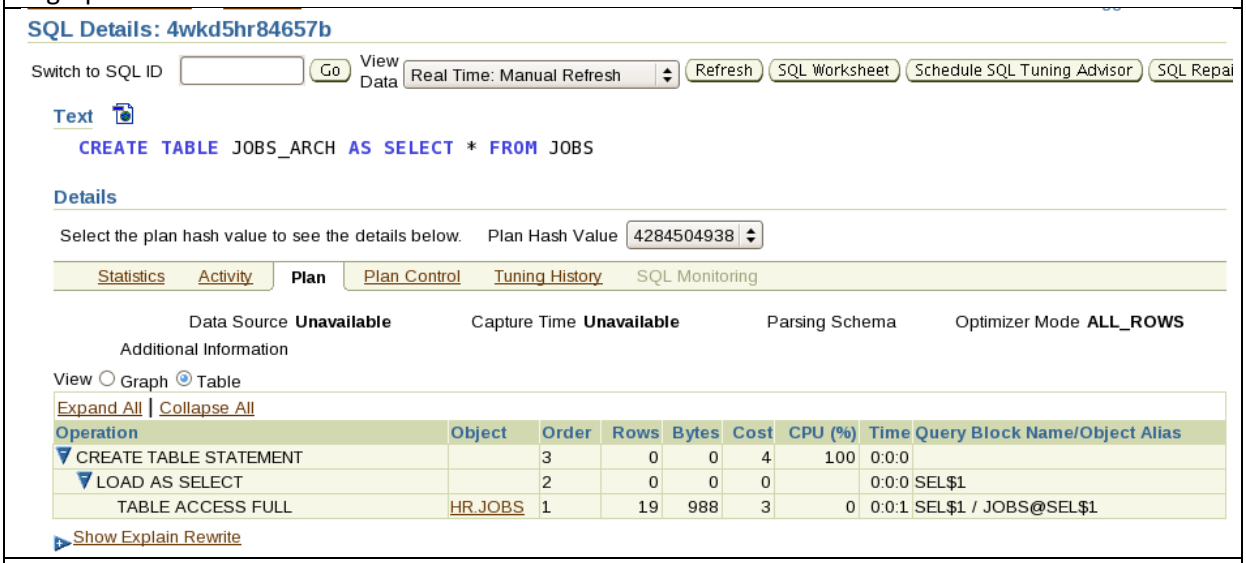
10. A window appears with the details of the selected set. The window lists the SQL commands that belong to the set. By clicking on the id of theia SQL commands we can view the details of this command.



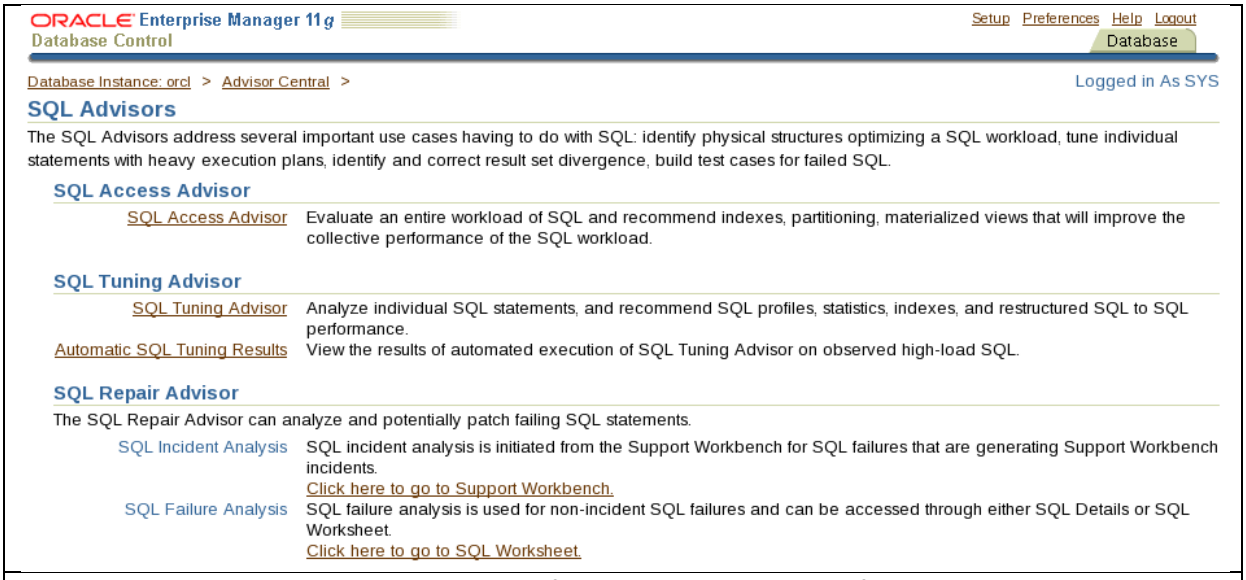
11. A window appears with the details of the selected SQL command.



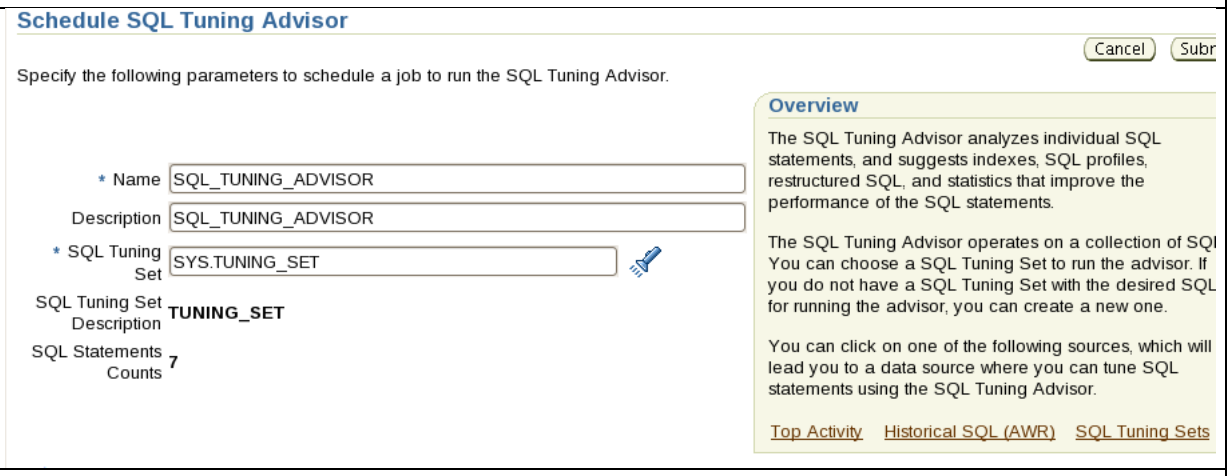
12. In this window on the Plan tab, we can view the plan for the execution of the selected command in graphic form or in the form of a table.



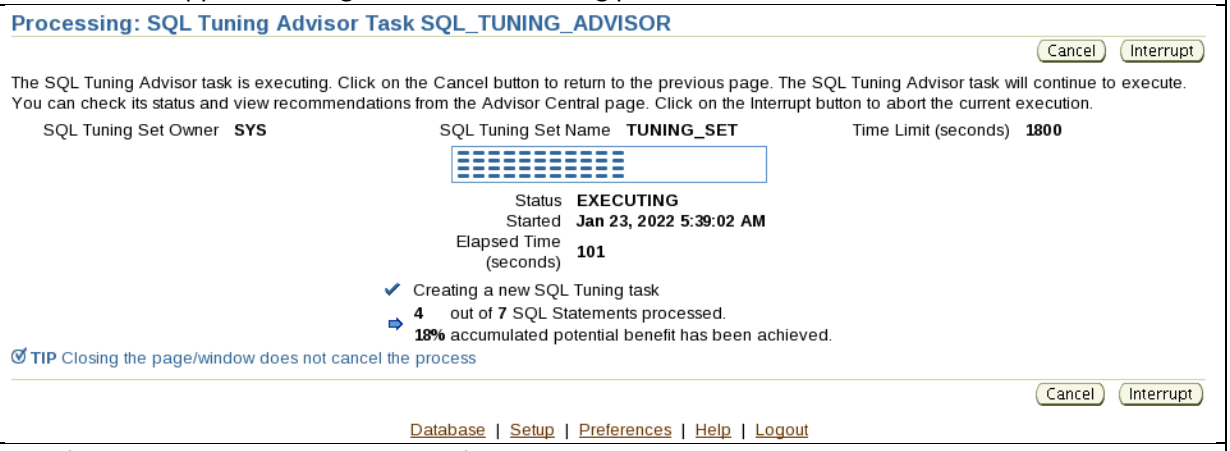
13. Use SQL Tuning Advisor. The SQL Tuning Advisor tool allows you to examine the SQL command set for performance and efficient use of resources. The tool proposes some recommendations, which can then be applied bybecoming an Enterprise Manager. Attention! The following is an example scenario for performing administrative tasks related to using SQL Tuning Advisor. In order to run the SQL Tuning Advisor tool on the Performance tab in the Related Links section, select the Advisor Central option. A window appears in which we select the SQL Tuning Advisor option.



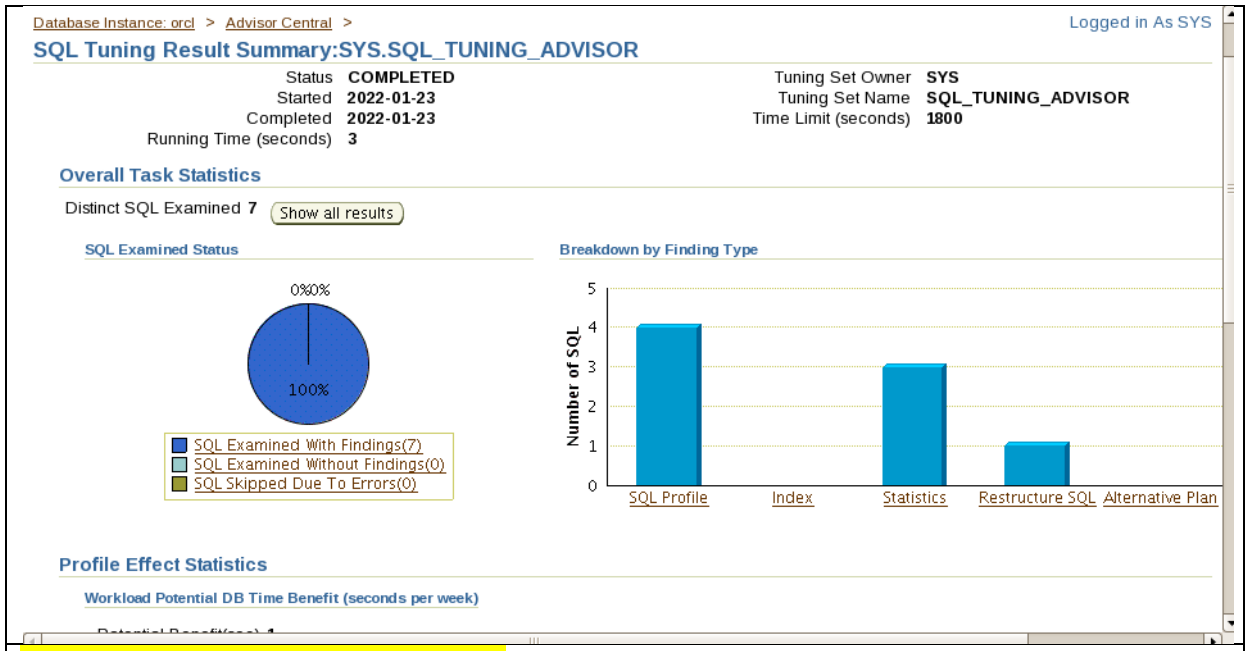
14. A window appears in which in the Name field we enter the name of the new SQL Tuning Advisor task, while in the Description field we provide a description of the SQL Tuning Advisor task. In the SQL Tuning Set field, enter the name of the SQL Tuning Set generated in the previous steps or click on the flashlight icon and in the window containing the list of available sets, select the new created set. Then click on the Submit button.



15. A window appears stating that the task is being processed.



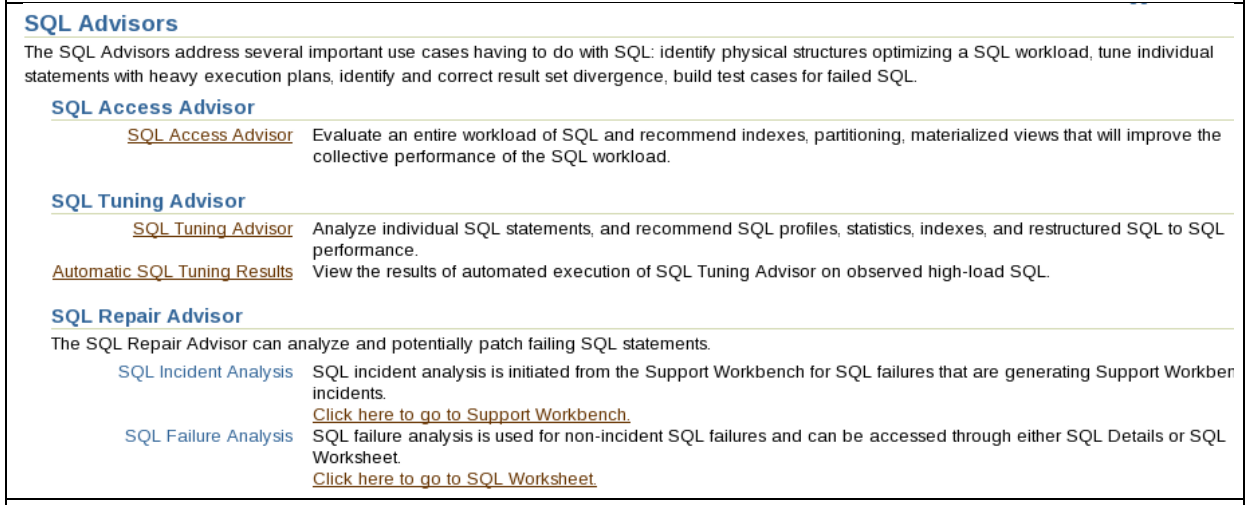
16. After the task is completed, a list of recommendations appears that you can apply to improve performance or make better use of resources. Only one recommendation can be applied at a time. We can choose any recommendation from the list and click on the Implement button .



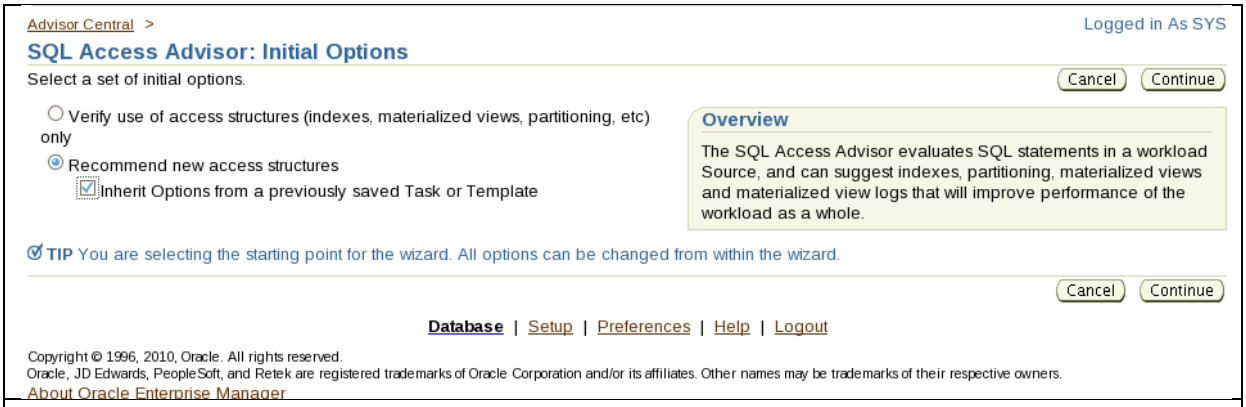
List of recommendations did not appear.

17. A window appears in which we enter the name of the new task in the Job Name field, while in the Comment field we enter the task description or comment. Then select the Immediately option and click on the OK button.

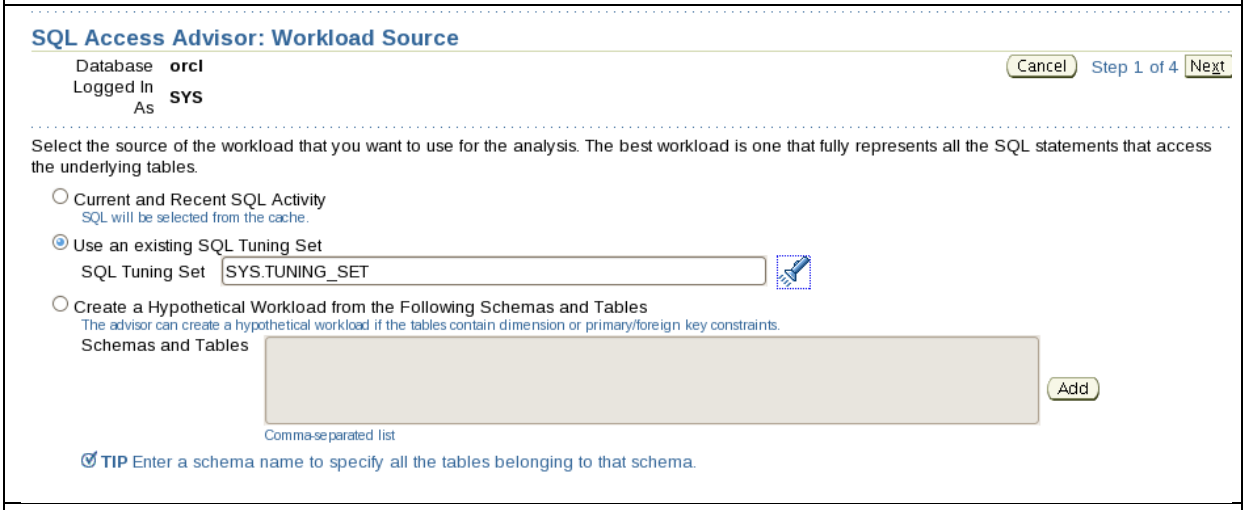
18. Use SQL Access Advisor. The SQL Access Advisor tool allows you to examine a set of SQL commands for performance and efficient use of resources. The tool proposes to create or change the existing database structures that store data. The solutions proposed by SQL Access Advisor can then be applied using Enterprise Manager. Attention! The following is an example scenario for performing administrative tasks related to using SQL Access Advisor. In order to run the SQL Access Advisor tool on the Performance tab in the Related Links section, select the Advisor Central option. A window appears in which we select the SQL Access Advisor option



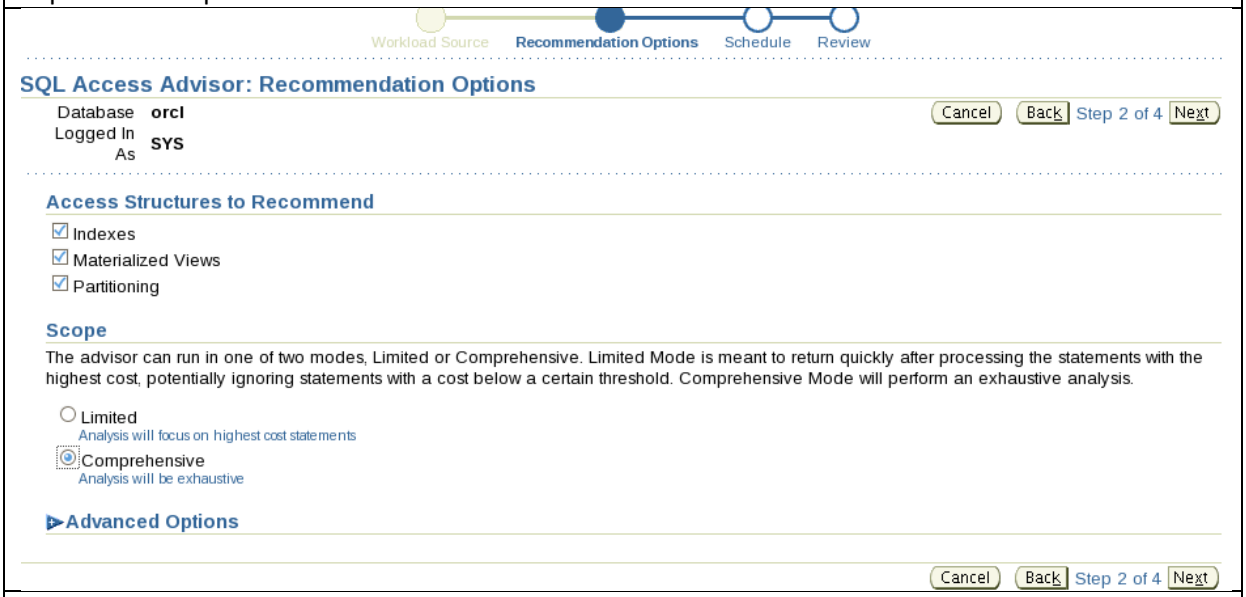
19. A window appears in which we select the option Recommended new access structures and select the option Inherit Options from a previously saved Task or Template. A list of templates appears,from which we select the Default Enterprise Manager task template template. Webluntly click on the Continue button.



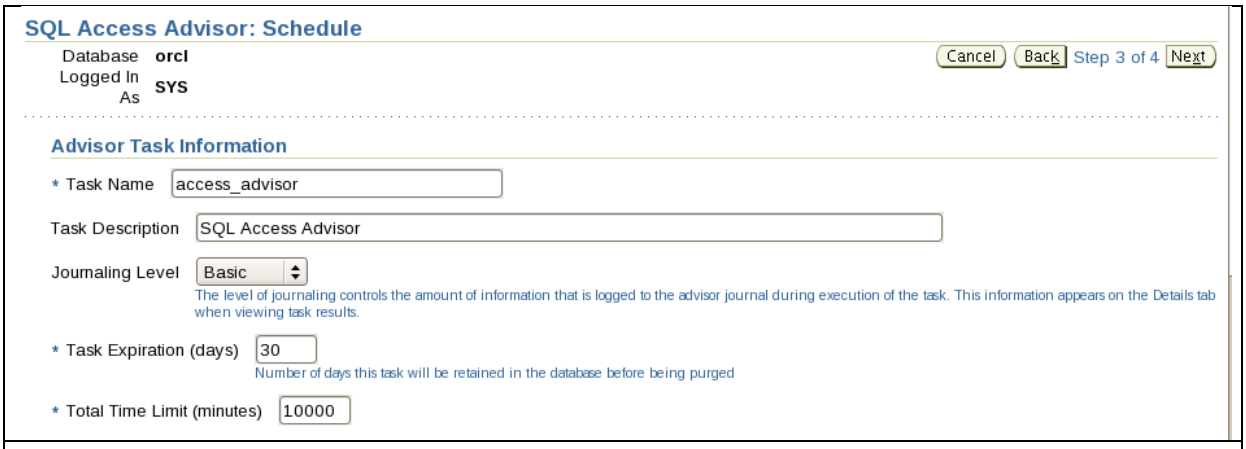
20. A window appears in which we select the Use an existing SQL Tuning Set option and in the SQL Tuning Set field enter the name of the SQL Tuning Set generated in the previous steps or click on the flashlight icon and in window containing a list of available sets select the newly created set. Then click on the Next button.



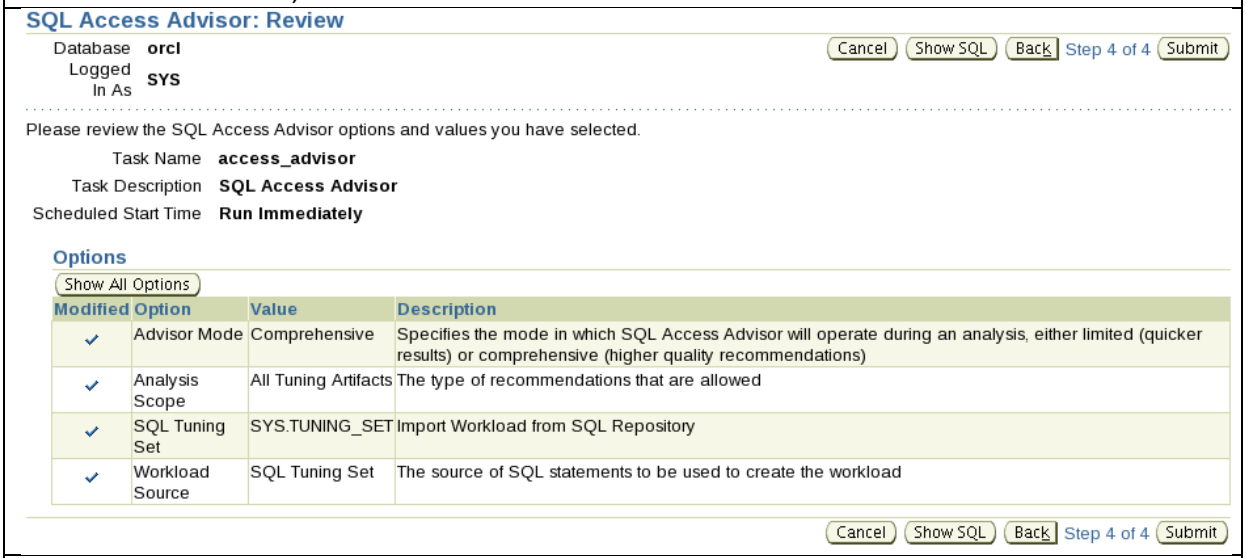
21. A window appears in which in the Access Structures to Recommend section we select the Indexes, Materialized Views and Partitioning options. Then, in the Scope section, select the Coprehensive option and click on the Next button.



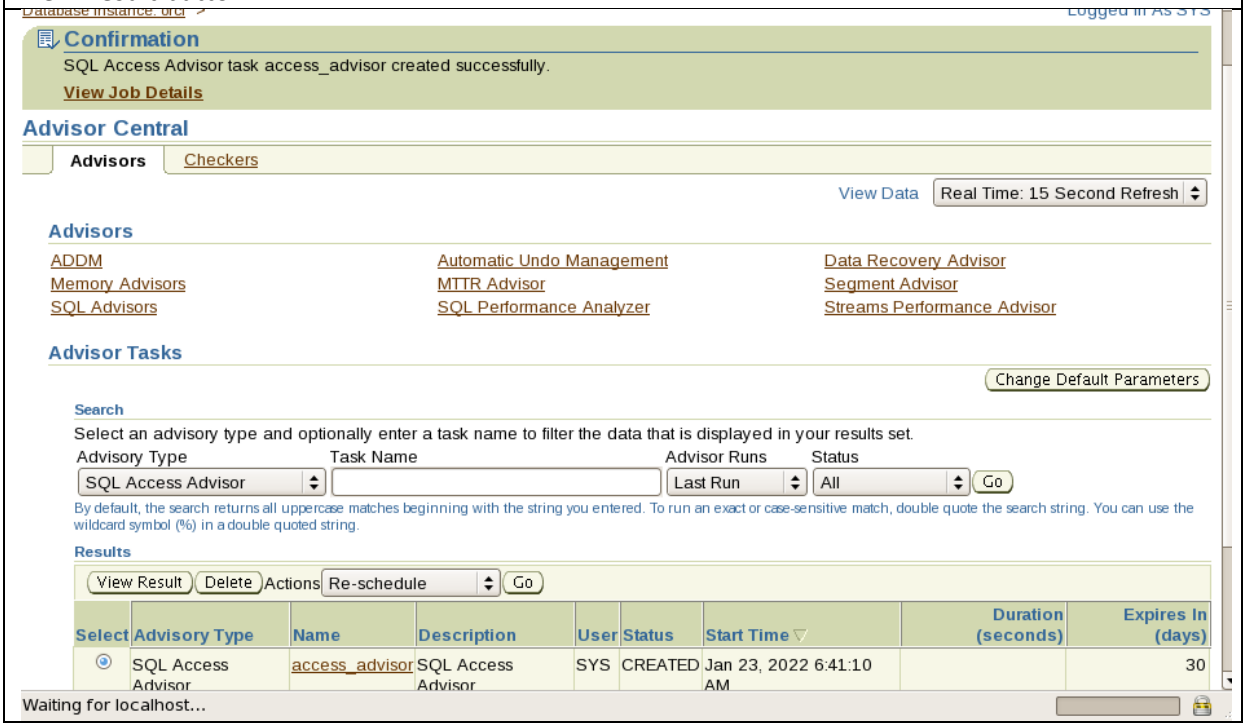
22. A window appears in which in the Task Name field we enter the name of the new SQL Access Advisor task, while in the Task Description field we provide a description of the tasksand tasks of the SQL Access Advisor tool. Then click on the Next button.



23. In the next window, click on the Submit button.



24. A window appears informingyou that the task was completed correctly. In the list of completed tasks of the SQL Access Advisor tool, select the task that has just been performed and click on the View Result button.



25. A window appears with the details of the task.

26. In this window on the SQL Statements tab, we can view a list of SQL commands for which recommendations have been developed .

There is no recommendations tab.

27. We go to the Recommendations tab. On this tab we click on the Show SQL button .

28. A window appears showing the SQL commands that will be executed if we decide to implement the proposed recommendations. In this window we click on the Done button .

29. If we decide to apply the proposed recommendations, then on the Recommendations tab click on the Schedule Implementation button and in the next window we enter the name and schedule of the implementation task proposed recommendations.

30. REMARK!!! Please use SQL Tuning Advisor and SQL Access Advisor for at east 3 SQL commands.