My 1st Year as a System Administrator: A Look Behind the Administrative Curtain.

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Introduction

As a functional user of Oracle E-Business Suites for over 12 years, I made the move to system administration. To my surprise, system administration is more than just setting up users, creating responsibilities and creating menus. This presentation will unlock some of the questions about what else goes on behind the curtain.

First priority is to ensure a positive end-user experience

When you buy a new automobile, one of the first things you may do is to review the Owner's Manual. It is important to know how often to change the oil, tune the engine, rotate and/or change the tires. The point is you become as familiar with the vehicle to obtain optimal performance. The same requirements hold true for system administration. Knowing your vehicle is just the start of good automotive care, understanding driving habits is equally important. System Administrators should try to understand the driving habits of the system's users. Some information you may want to consider researching is: what, how long, how often, and how many jobs are requested. The data gathered can be helpful in optimizing the performance of the system. The System Administrator's first priority should be that the systems respond in such a way to create a positive end-user experience.

My first close as a system administrator

Carnival Corp & Plc is made up of many companies located in various countries. The time zones span from Australia, to the west coast of the United States. In the past twelve years, I had been on the other side of the financial closing process. I requested the long running jobs that would backup the system. I would be the one complaining that the system seemed slow. In my first close I now had to deal with the very situations that I use to cause then complain about. I will now pass on some tips that were learned from that experience.

In the System Administrator responsibility there some key application screens/forms you want to be familiar with when trouble shooting system problems. In the front door of your house you may have a peep-hole to look outside and see is going on out side; however to get a better look you may choose to go to the front room window. The Concurrent Request screen serves as that front window, just as a phone call serves as a peep-hole. The Concurrent Request screen can be used to validate the calls or e-mails that have been receive from the system's users. This screen can give you insight on the type of activity has been requested in the system. The best way to explore this form is by querying on the Phase field. The key phrases to query on in the *phase field are*: Pending, Running, and Inactive. You can also get a record count on how many request will have an impact on the system. The Administer Concurrent Manager Screen is another useful screen to see what is going on behind the curtain. This screen will allow you to see not only how many jobs have been requested, but also the pending status, what managers are backed up, and how many process are being handled by the Conflict Resolution Manager. You will also be able to drill into the detail based on what concurrent manager one might want to explore for review.

In the period end close, it was determined that too many things were running in the Standard Manager queue. Based on some research, a decision was made to add four additional Managers: Workflow Manger, FSG Manager, Daily rate Manger and the Alert Manager. We then assigned respective jobs to run exclusively in these managers. We also determined that the number of jobs in running status per user should be limited to three. This was done by setting a profile option on the site level so that the restriction will filter down to all users and any responsibility. Segregating the managers helped to monitor what type jobs that were the main cause of system back log. Studying the request that were back logged allowed us to develop strategies to address those long running reports or programs. There were three strategies that were implemented from the study. First strategy was to segregate long running program so that they would run in a separate queue. This allowed faster running process not to have to wait for the long running process to complete. The second strategy was to make conflicting and long running programs incompatible with themselves or other long running programs. This strategy has a positive and negative impact on the user. The positive is that queues are not exclusively dominated by long running processes. The down side is that requestors of theses processes may have a very long wait time. The third strategy helped to determine which programs or reports are candidates for a re-write.

A lot of learning came out of that first closing period, from setting up managers, to creating program incompatibilities, but the single most important lessons learned were: Know the closing cycle well, understand the end users request tendencies, and be prepared to make some on the spot decisions.

Behind the curtain

The best part of a magic act is not what is seen, but what is not seen. If someone in your organization were to ask, "Who is your System Administrator?" The answer "I don't know." would be considered a complement. The tasks that are performed behind the curtain are as important, as things people would typically see as an administrator's task. The setup, the configuration and the security options, dictates to the user how they will be able to interact with the system. There are thousands of profile options that can be set. Knowing how users expect the system to function can drive the decision on what level the profile options should be set. For example if you have an organization that runs multiple sets of books on the same instance, then you must set the Set of Book profile option at the responsibility level. This will enable the various responsibilities to be segregated by their respective set of books. Setting profile options at the site level means that you want all users to be impacted the same way by a single configuration. Setting profile options at the application level means that all users working under responsibilities owned by a particular application will be impacted by how that profile option is set.

Everyone likes to go to a party, but come early to help setup or stay late to clean up. The behind the scene work that it takes to make parties or events successful is the same work that a system administrator goes though to make the system use successful. The System Administrator must be accountable for how well the applications perform on the system. There are clean up jobs that keep the system from getting bogged down and optimizations programs that can be run to enhance application performance. One may want to schedule the FSG Optimizer program, and other jobs such as; Gather Database Statistics. One should run these tasks on a periodic basis to improve or adjust how the database will perform in reporting and querying in the system.

Over the course of time, water pipes begin to collect sediment that inhibits the flow of water. When this happens we usually call a plumber. The concurrent managers, just like a water pipe over time collects sediments. Thousands of requests are made in the system on a daily basis. These request, will stay out there forever unless there is a process for cleaning them up. Workflow is another area that requires some attention, as a very large amount of transactional data is created. Over time some workflow process will get also get "stuck". There are a few concurrent processes that should be running on to address the stuck workflows as well as old files written to the server. A list of these processes can be found in appendix (A).

Evaluating a stuck process vs. a busy system

In the previous section titled "My first close as a System Administrator", it was mention that the system was slow or backed up. This bring to question, how do you evaluate a system that really has an issue vs. a system that is just handling a lot of concurrent requests? Check the Internal Manager and the Conflict Resolution Manager to see if they are running properly. This can be done by ensuring that the actual is equal to the default target of one. If the actual amount is zero, then all the other managers lose the ability to reassign processes. This will eventually lead to a shut down of all the concurrent and transaction managers. At that point the internal manager must be restarted; you should contact the DBA to perform this task.

Next look in your manager queues to see if there are a high number of requests waiting. Three things could be the cause of this problem. The process is stuck, the process has died, or the stuck process is incompatible with other processes behind it. Select the Manager of interest; review all the process with a status "Running Normal" using Diagnostics. Look for start time to see if it has been running for a long period of time. Chances are if it has been running since the prior day, the process is stuck. To identify that a process has died: select the manager of interest, click on the request button, and review all the processes with a status of "Running Normal" using Diagnostics. If the message that diagnostics gives is " the process has aborted or completed with an error", you should contact the DBA with the request number and program name and have them change the status from Running Normal to Completed with Error. This should then free up the request queue for the next process. To evaluate a process that is incompatible with other processes follow the instructions in appendix (B).If there are no significant problems with processing and the queues are backed-up due solely to the volume of request; then you may want to create a temporary work shift to run under the respective manager in order to increase the processing queues. See appendix (C)

Maintaining the system

Just as an auto mechanic has a role in maintaining the life and performance of an automobile, a system administrator plays a similar role when it comes to maintenance. There are various things that need to happen in the Oracle Application world such as; cloning, patching and regular system downtime for backups or other database issues. The pre-task may consist of: scheduling the shut down of the internal manager via work-shifts, putting on hold Sys Admin Processes, and setting up the down time notifications to user in the frame work homepage. Before the actual maintenance begins and the system is placed into maintenance mode, the system administrator should verify that all the managers have been properly shut down and that certain jobs should be canceled or placed on hold if cloning is the process. When maintenance is complete verify that all the managers are

up and running jobs have been re-scheduled or taken off of hold. Also verify that the login notification about the application status has expired or been taken away. Test for login access using framework or the Oracle home page. Then notify the users that the system is available for use.

In the automobile industry there are part recalls for known defect with a certain vehicle. The recall is usually for a certain year and specific part. When there is a problem with an Oracle Application, they usually make available a bug fix in the form of a patch. The patch is applied by the application DBA. The footwork or the analysis can be done by the system administrator. Before a patch is applied the system administrator should go through a verification process. The reason for this is to ensure that: the patch will actually work, no prerequisites are missed, identify files will be updated, what menus would be changed, any new files introduced and what responsibilities would be impacted. Appendix (D) will outline the patch analysis process. When Patch Analysis is run it produces a read-me file in the output. The information can then be disseminated to the users across the company so they can effectively no what to test. The system administrator can leverage off the patch analysis process to raise any type of concerns such as form changes and potential breakage of customizations.

Things to know
Did you know it is possible to dig a hole for a swimming pool with a shovel? However it is easier if you use a backhoe. The most mundane part about system administration is setting up menus responsibilities and assigning profile options. At times one may find themselves setting up similar configurations over and over again. For that very reason it is good to be familiar with a third party tool called Data Loader. Data Loader is an application that let one perform macro keystrokes based on the information that is required to complete an application form. Data Loader can keep one from having type in information that can easily be missed or skipped. Data Loader Professional is like Data Loader on steroids. With the professional version you and your computer are not tied down to watching the load. This frees up resources to do other task that may require attention.

Oracle Application Manager, I like to call it the eyes behind the curtain. In this module one can monitor how the system is doing. Use the Application Dash Board to navigate to what you would like to explore. The Overview tab allows you to see if there have been any configuration changes made to the system in the last 24 hours. This looks for patches, site level profile options and application context file update in the last 24 hours. You can also see web components status and any alerts, System or User. You also can expand on that application manager system status and drill down on all the key statuses to see if everything is checked green. You can even drill down into the concurrent request made.

Third party tools can be useful in system administration. They can be used to help gather statistics about concurrent request, help validate system setup, and even help you discover things such as patch levels for your Oracle application. Some tool can give you menu hierarchies by application and responsibilities. Other tools may graphically show concurrent process status, workflow errors, and stuck process. Each company should evaluate third party tools with monitoring criteria as one of the bench marks for being a good fit.

Conclusion
System Administration is a far cry from the day to day functional task that I had been performing over the years. There is a lot of planning research and collaboration that need to happen when functioning in this role. After just one year I have learned there is a lot more than meets the eye. Many of the job functions of an administrator go un-noticed, and that's ok as long as the system is functioning with out any real issues. One could say that it is a magic act that happens behind the curtain.

Appendix (A) Cleaning up and optimization programs

Workflow Background Process: Yes :No :No
Workflow Background Process: No :Yes :No
Workflow Background Process: No :No :Yes

Purge Obsolete Workflow Runtime Data: 70:Permanent:N:500
Purge Obsolete Workflow Runtime Data: 14: Temporary : 500
Purge Concurrent Request and/or Manager Data : All.Age.14……..Yes .Yes
Purge Debug Log and System Alerts: Time Stamp

OAM Applications Dashboard Collection :
Workflow Control Queue Cleanup
Synchronize Workflow LOCAL tables (Report Set) : 0, 700
Program – Optimizer : 101, Y, N

Appendix(B)Viewing for Incompatible programs
Navigate Concurrent=>Program=>Define.
Query up the pending program name

Click on the incompatibilities button to see what programs the pending job cannot run with.

### *Appendix (C) Creating Temporary Work Shifts*

1. Navigate to define WorkShifts **:**Concurrent=>Manager=>WorkShifts
2. Insert new WorkShift record use your user-id as name
3. Complete by filling in from and to time and date that WorkShift will expire
4. Navigate to Concurrent Mangers form
5. Query up the Manager of interest
6. Select the WorkShift button
7. Assign the new WorkShift to the manager
8. Define the number of process to run. (Increase by no more than two)
9. Accept the default Sleep time.
10. Save the work.
11. Navigate to Administer Concurrent Mangers Form
12. Select the Internal Manager then click on the Verify Button
13. Refresh the screen to see if verification has completed
14. Review manager of interest to see if process has increased.

## *Appendix (D) the Patch Analysis Process*

The patch analysis process can be accessed through the Oracle Application Manager (OAM). You can access OAM from the System Administrator Responsibility.

Workflow = > Oracle Application Manager => Workflow Manager

- On the application manager Click on Site Map
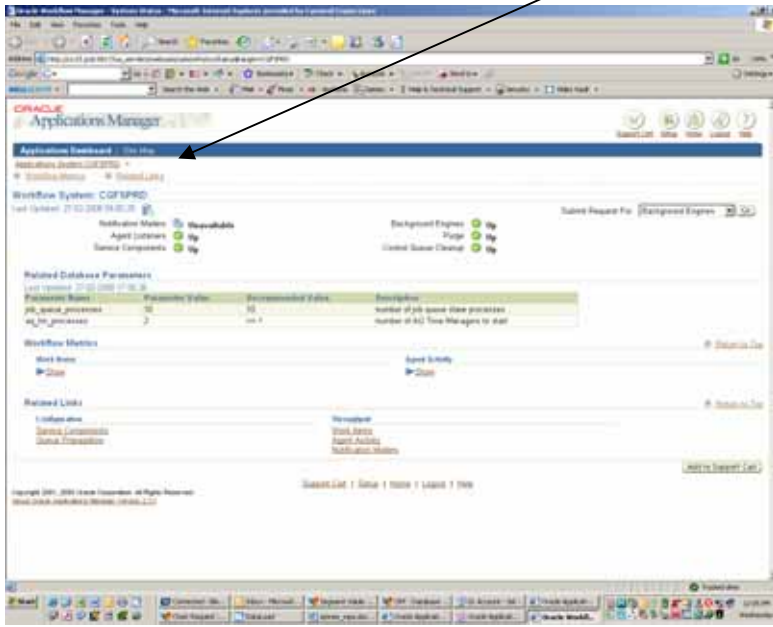
- Click on the Maintenance Link
- Under Patching and Utilities click on Patch Wizard
- Recommend/Analyze Patches
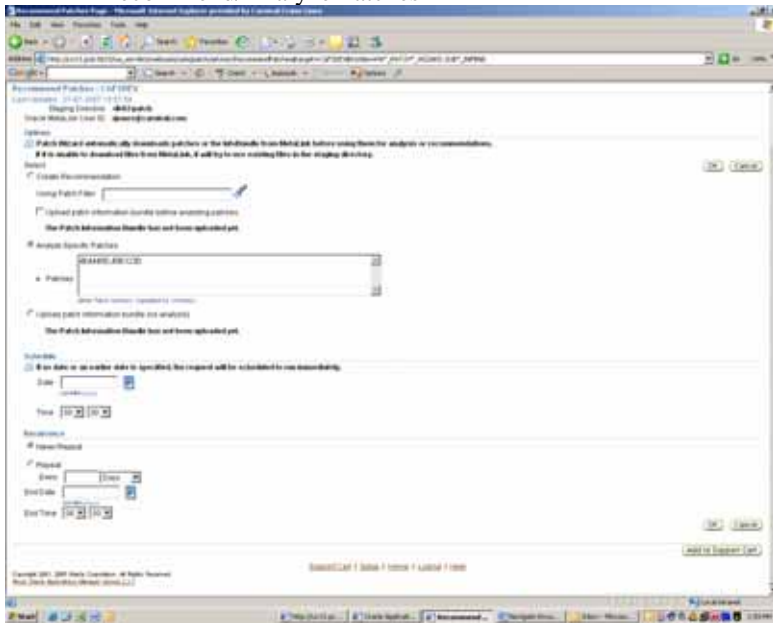
- On the Options section of the page select the Analyze Specific Patches radio button. (You may enter in multiple patch numbers as long they are separated by a comma.)
- Click on the OK button when you are ready to begin the analysis process.
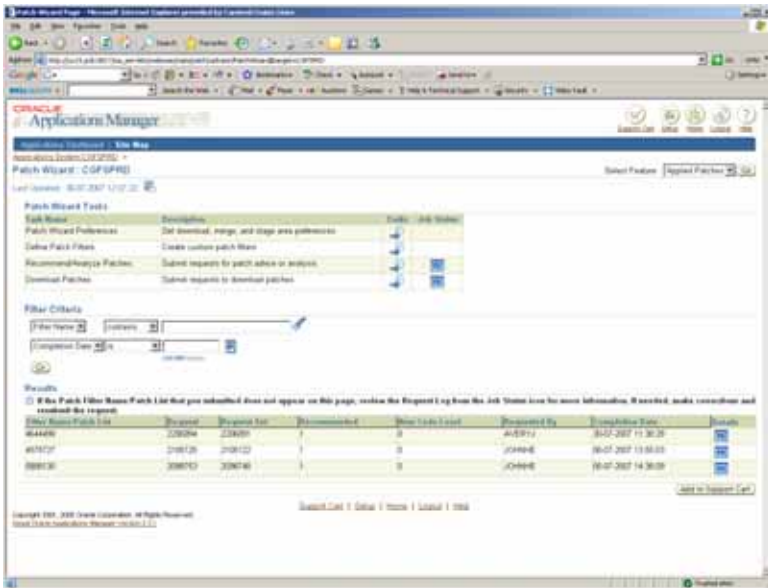
Under the Filter Criteria section of the page click on the Go button to refresh the results. Your completed concurrent request should appear in the results section.
Click the details button to analyze all the requested patches.

Click on the Impact Page to view what the patch will impact:
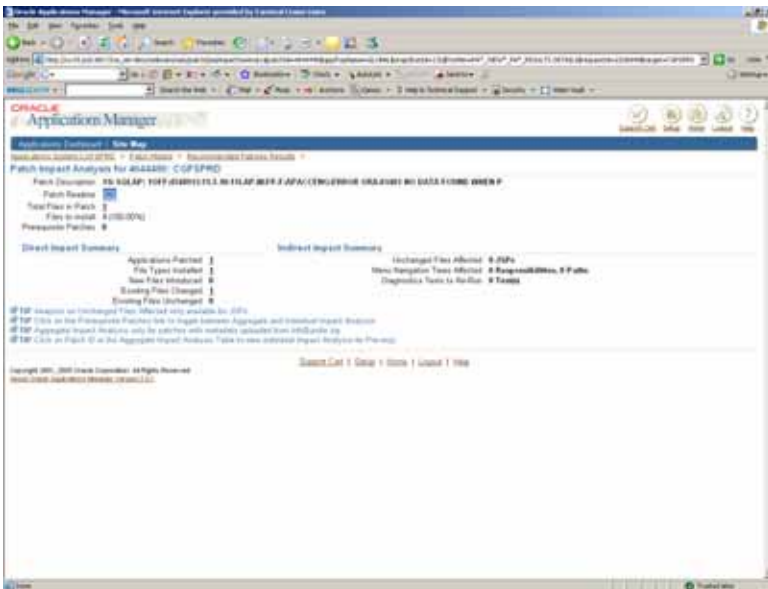
You can the click on the individual HTML links to explore for further information.