



Disclosure Scotland Service Improvement Plan

In Commercial Confidence and without Prejudice
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Introduction

- **BT created a service improvement and housekeeping plan to proactively manage known performance issues with a view to improving PVG stability until the end of the contract.**
- **Included in the plan was the reclamation of space on database and application servers, improving the efficiency of database connectivity, conducting passive restarts of servers and improving log rotation on the servers.**
- **This paper provides outputs of the service improvement and housekeeping plan to date and provides suggestions on how best to accommodate the remaining proposed changes without impacting Disclosure Scotland's critical migration activities.**

Service Improvement and Housekeeping plan – what did BT recommend?

One-off Activities

- Improve housekeeping on database tier
 - Reclaim filesystem space on the database servers with a view to improving overall performance of the servers with the aim improving database performance.
- Improve housekeeping on application and presentation tiers
 - Reclaim filesystem space and improve automated housekeeping scripts on the application, presentation and webservers with a view to improving overall performance of the servers with the aim of reducing the number incidents attributed to file space and server utilisation issues.
- Informatica Re-index Frequency
 - The frequency of breaches of the synch count high water mark was increasing resulting in the need to perform resource intensive informatica re-index exercise which is known to cause system performance problems. Decreasing the synch rate parameter should slow down the synch backlog reducing the frequency of the informatica re-index exercise.
- PLX Parking
 - Investigate the possibility of 'parking' PLX cases similar to the existing PMM parking exercise.
- Informatica Re-index Script
 - The current re-index scripts use RAC01 node to perform the re-index. Reconfiguring the informatica re-index scripts to utilise other RAC nodes will reduce the load on RAC01 and , when running, should reduce the impact on the PVG Application.
- Application Database configuration
 - Reconfigure the RAC nodes used by the various components of the solution to reduce the load on the RAC node that is primarily used by the PVG Application

Ongoing Activities

- Improve automated housekeeping
 - Improve automated housekeeping scripts on the application, presentation, web and database servers with a view to improving overall performance of the servers
- Release 10000 parked PMM cases per week.
- Informatica Re-index Threshold
 - Monitor the resynch count and perform re-index when synch count reaches 500K
- Passive Application Restarts
 - Continue to perform passive application service restarts to reduce frequencies of stuck threads which cause PVG application performance issues.
- Full Application and DB restarts
 - Perform regular clean restart of application servers, database and RAC servers to improve performance of the PVG application. To be performed quarterly or as and when system performance issues demand.

Service Improvement and Housekeeping plan – what progress has been made?

One-off Activities

- Improve housekeeping on database tier (**COMPLETED**)
 - Over 1.5TB of file space reclaimed attributed to improved recent performance.
- Improve housekeeping on application and presentation tiers (**COMPLETED**)
 - File space rationalised reducing the occurrences of incidents caused by file space issues
- Informatica Re-index Frequency (**COMPLETED**)
 - The Informatica synch rate was decreased resulting in a reduction in the frequency of re-indexes from twice a month to once a quarter.
- PLX Parking (**ON HOLD**)
 - The volume of applications in the system now and forecasted volumes negates the requirement for this activity. As such, BT recommends the suspension of this activity.
- Informatica Re-index Script (**ON HOLD**)
 - Further analysis of the re-index process suggests ASM would be the bottleneck regardless of which node is used, this, in addition to the frequency of the need to re-index, negates the benefit of making the changes. As such, BT recommends the suspension of this activity.
- Application Database configuration (**ONGOING**)
 - During the implementation of OCR 2733, Re-balancing database utilisation, in Live Support it became apparent that the implementation of the changes into the environment was not as straightforward as first thought. BT believe the risk of implementation into production may outweigh the perceived benefits so would therefore require more time to investigate.

Ongoing Activities

- Improve automated housekeeping (**ONGOING**)
 - The existing automated housekeeping scripts have been analysed and the proactive monitoring scripts updated where necessary.
- Release 10000 parked PMM cases per week (**SUSPENDED**)
 - This activity has been suspended at the request of Disclosure Scotland.
- Informatica Re-index Threshold (**ONGOING**)
 - The re-index has not been required since October 2017.
- Passive Application Restarts (**ONGOING**)
 - Passive restarts continue to be carried out to resolve potential issues.
- Full Application and DB restarts (**ONGOING**)
 - System performance has not warranted a full application and database restart of late. There have been a number of full system restarts in the quarter as part of planned implementation work. BT recommend a quarterly review to determine if a full restart is deemed necessary to improve performance.

Service Improvement and Housekeeping plan– what are the results?

- **BT started the implementation of the service improvement plan in July 2017, in addition to the original service improvement plan BT have been improving BAU processes such as extending proactive monitoring and streamlining the database backup policy and its implementation.**
- **During the quarter, October to December, BT observed a 50% reduction on P1 count from October to November and a further reduction again in December delivering the highest PVG availability in a six month period. The 50% reduction from October to November was delivered despite still being in peak system utilization period and the further reduction in December coincided with expected reduced application volumes.**
- **BT believe that the improvements can be largely attributed to implementation of the improvement plan and improvements to the BAU activities.**

Service Improvement and Housekeeping plan– what are the next steps?

- DS and BJSS recently shared the latest version of their Digital Roadmap with BT. The roadmap revealed plans for seven iterative two week sprints , the respective impacts and the desired product outcome.
- DS also confirmed that they are keen to progress with the proposed application database reconciliation changes, as covered in OCR 2733 , while ensuring regular prearranged access to Live Support to accommodate the testing of the product outcomes of the forthcoming sprints.
- BT would like to highlight that during the implementation of OCR 2733 into Live Support it became apparent that the implementation of the changes is potentially more complicated and risky than initially perceived. Additionally failover/redundancy testing in LS, which requires changing the running state of multiple components, is hard to conduct efficiently if the system has to be continually re-baselined to prepare for BJSS testing. As such, given the recent service improvements coupled with the decline in application volumes reducing the load on RAC01 , at this moment in time BT does not recommend the deployment of OCR 2733 into production. In the meantime, BT would like to continue to investigate the application database reconciliation changes in UAT which, in terms of Oracle RAC set up, is more akin to the production environments as well as looking at more holistic alternatives.
- Utilising UAT for the risk analysis of the OCR will enable DS/BJSS to have prolonged access to Live Support in order to test the product outcomes of the proposed sprints.

