

DSB Production Root Cause Analysis

For Increased latency during ISIN creation.

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Revision History

Version	Date	Reason
1.0	September 22, 2021	RCA

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IMPACT ASSESSMENT & CATEGORIZATION

Cosmetic Impact (Severity Four – S4)

Increased latency detected when creating an ISIN

Start: May 9, 2021

Resolved: June 30, 2021

Total: 1 months and 21 days

Impact: The DSB ISIN Creation Latency SLA of 1000ms was not met in June, a value of 1,016ms was recorded.

For details of classification of Incidents please see [Appendix 1](#) on page 3.

The monthly DSB Latency and Throughput Statistics and Latency targets can be found at <https://www.anna-dsb.com/operational-status/>

INTRODUCTION

The purpose of this Root Cause Analysis (RCA) is to determine the cause that contributed to the increased latency when creating ISIN's in the DSB's Production environment. This started to degrade after the 9th May 2021 causing the monthly metric for June to exceed the SLA by 16ms. This RCA determines what happened during the timeframe, how it happened, and why it happened. An investigation took place by the DSB Technology teams to identify the cause of the high latency. The DSB also worked closely with the DSB's Service Provision Partner as well as one of the component vendors to ascertain the primary root cause that contributed to this issue.

EXECUTIVE SUMMARY - FINDINGS AND ROOT CAUSE

The root cause has been determined to be the release on the 9th May which caused the database cache to be updated with information specific to the release. This had effectively replaced the usual contents of the cache which meant that significant paging from disk was now taking place. This caused sporadic delays in the database transactions being issued which caused the increase in latency.

CORRECTIVE ACTIONS TAKEN & PLANNED

- The DSB restarted the database instances, this forced the cache to be correctly built and improved the performance back to levels prior to the 9th of May 2021.
- To further improve performance, the database instances were upgraded to make more memory and CPU available to the database.
- The DSB made one change to the database configuration, taking into consideration a recommendation made by the application vendor who manage the database access.
- Two further optimisations have been delivered by the application vendor. These will be implemented subject to successful completion of testing.

DETAILED EVENT DESCRIPTION

The DSB Latency targets in June 2021 exceeded the 1000ms SLA by 16ms. The issue was identified as part of an extensive investigation which has led to additional changes being made which have further improved the latency figures. The ISIN Creation latency SLA value returned back under the 1000ms target in July and has continued to improve since.

APPENDIX 1

Classification of Incidents

Severity	Definition
Critical (S1)	Critical production issue that severely impacts the DSB Service for all Users. The situation halts business operations and no procedural workaround exists. DSB Service is down or unavailable. Major data elements are corrupted or lost and must be restored from backup. A critical documented feature / function is not available.
Major (S2)	Major functionality is impacted or significant performance degradation is experienced and is not a Critical Incident. The situation is causing a high impact to some Users' business operations and no reasonable workaround exists. DSB Service is operational but highly degraded performance to the point of major impact on usage. Important features of the system offering are unavailable with no acceptable workaround; however, operations can continue in a restricted fashion.
Minor (S3)	There is a partial, loss of use of the DSB Service with a medium-to-low impact on your business, but your business continues to function that is not a Critical Incident or a Major Incident. Short-term workaround is available, but not scalable.
Cosmetic (S4)	Inquiry regarding a routine technical issue; information requested on application capabilities, navigation, installation or configuration; bug affecting a small number of users. Acceptable workaround available.

Reference: [DSB Service Level Policy 2021](#)