Application: DDAS Web Application

Recommendations provided by Clarity Information Technologies, developers of DDAS Web Application.

11 Feb, 2019.

# Problem

*The users reported*

*We have received multiple cases/issues from users facing different issues and unfortunately, we are unable to identify the specific reason or defined timing. Listed below are the issues observed by team on different instances.*

*1. Tool works very slow and lag in Tools response*

*2. Batch files are not getting uploaded*

*3. Among list of records uploaded, only few reflects which other vanishes or it duplicates the records.*

# Investigations:

The application response was slow when Batch uploads by multiple users were carried out simultaneously.

The following observations were made:

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| --- | --- | --- | --- |
|  |  |  |  |
| 28-Jan-2019 11 AM to 5 PM | Page Load performance | Login to home page: 10 secs. | Normal |
| 28-Jan-2019 11 AM to 5 PM | Page Load performance | Manage Reassignment page: 13 secs. | Normal |
| 28-Jan-2019 11 AM to 5 PM | Page Load performance | QC page < 3 secs. | Normal |
| 28-Jan-2019 11 AM to 5 PM | Batch Upload during | Files were getting uploaded by ICON users | Normal |
| 30-Jan-2019 1~ 1 AM | Server Performance | CPU Utilization : 84% | Very High |
| 30-Jan-2019 ~ 11 AM | Server Performance | Memory Utilization : 96 | Very High |
| 30-Jan-2019 6:30PM | Batch Upload during off hours, one user logged into the application – 4 batches were carried out, each with 1, 2, 3 and 5 PIs. Avg Time Per PI: 1.5 mins. | Memory Utiliztion 1 to 8%  CPU: 35 to 36% | Normal |
| 31-Jan-2019 | Server performance during the shift hours was monitored | CPU 1 to 70%  Mem: 57 to 65% | Normal |

# Recommendations:

The application uses a batch process to upload user inputs, scan the Mongo dB database and generate compliance forms. Each compliance form comprises of one or more Investigators (Principal or Sub) and the scanning process takes average 60 seconds to process the data and add ‘Findings’ to the Compliance Form.

We found that the server is underpowered during Batch Uploads. The Batch Upload is Memory + CPU intensive and the server slows down when multiple users upload the files simultaneously.

Three recommendations are provided.

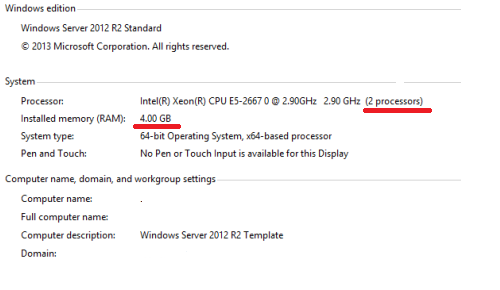
1. Nightly Batch Upload
2. Server Upgrade.
3. Scan process on a separate server.

## Nightly Batch Upload:

A facility can be provided in the application to process the files during the night. In this process, the user uploads the files during the normal working hours. The application can be programmed to pick up the files sequentially during shift off time (6pm to 6 am) and the processed data will be available for the Processor to carry out Due Diligence in the next day.

## Server Upgrade:

The current server configuration is:



Please consider upgrading the server to a configuration similar to following:

The below configuration is based on configuration of ICON Prism Web Server.

|  |  |
| --- | --- |
| Processor | 1 x Quad Core (8 Thread) 3GHz 64-bit CPU or equivalent |
| RAM | 8 GB |
| Hard Disk | 80 GB HDD |
| Operating System | Windows Server 2016 Standard |

## Scan Process on a separate server.

The application performance will significantly improve if the Scan process is hosted on a separate server. This however requires a major overhaul of the existing DDAS Web application.

# Summary:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Recommendation 1 | **Recommendation 2** | Recommendation 3 |
|  | Modifications to DDAS | Nightly Batch Upload requires modifications to the DDAS Application. | **No modification required in DDAS Application.** | Major overhaul to DDAS Web Application. |
|  | Changes required in business process | The Business process requires change, the users need to upload all the batch files on the previous evening | **No change required in Business Process, uploads can be carried out normally.** | No change required in Business Process, uploads can be carried out normally. |
|  | Delivery | 10 working days | **Approvals by ICON IT: ?**  **Server Setup: 2 – 3 days** | DDAS Web Application: 45 days  Server Setup: 2- 3 days |
|  | Cost | Approx. INR 60000/- | **Cost of upgrade: ICON IT to provide.**  **Cost of setting up the application: INR 25000/-** | Cost of modifications to DDAS Web Application and cost of Scan Process: Not available, however this will be significantly higher than the cost of Reco 1 and Reco 2.  Cost of server: Not available, can be obtained from ICON IT. |
|  |  |  |  |  |

We feel that Recommendation 2, Server Upgrade will provide a cost effective solution with minimum interruptions during the Upgrade process and no changes required in the current Business Process.