Types of performance problem

• Intermittent • Often the trickiest to understand and diagnose

• Generally need to take a wider look at the overall system

• Consistent / Reproducible

• Often the easiest to describe and diagnose, as can focus on one area and enable relevant debug/trace logs • “Is my system giving best performance?” • Looking for validation of specific installation. i.e. Performance Review

Causes of performance issues

• Resource exhaustion

• For example: CPU at 100%, Memory exhausted so paging to disk, process has hit configured memory limit so is thrashing (e.g. java), process needs lots of data from Database and is taking long time to return the data set

• Root cause could be that more hardware is needed for the given workload, poorly written application code or poor application/database tuning

• Check published sizing recommendations (Architecture and system requirements) and tuning guides (Node.js web server recommendations)

• Test with representative workloads

Causes of performance issues

• Resource contention

• Can be due to Database locks, Application logical locks, hot blocks in database, sequence number generation, etc.

• Root cause could be data model design, application code, poor application/database tuning, unusual data set, customisation or configuration choices

• e.g. could consider to change Sequence numbers to Database, check your Anti-Virus exclusions

• Both causes can be tricky to track down, but could consider using the Sage Support “Investigation Scripts” to collect data for review, if no other tools are available

Understand and describe the problem fully

• Troubleshooting and data gathering techniques For ALL processes and screens considered slow, try to gather as much detail as possible, for example: - When did the issue start, what changed since it was acceptable performance - Navigation path to screen or process and function code being executed, also any parameters being used - Does it happen in all instances (e.g. SEED, LIVE, TEST) - Is it consistently slow or intermittent

• If intermittently slow, does it only go slow dependant on amount of data, number of users on system, time of day, only after a system restart or some other factor - Does it take the same time to complete in Edge, Firefox, Chrome browsers (for screens) - How long the process takes when performing slowly, what is the normal amount of time it takes and what is the time expected - Step by step test case to demonstrate the issue - Do you see the same performance issue when running via a browser session on the server itself - Business impact the problem is introducing, to allow prioritisation where there are multiple issues

Understand and describe the problem fully

• Troubleshooting and data gathering techniques Consider what additional information can sensibly be gathered (and relevant to the reported issue) to provide evidence: - Sage X3

• Additional Syracuse logging

• See “Syracuse logging” presentation from “Index page: Sage X3 Technical Support Tips and Tricks (March 2021)”

• Performance Index (“IO Bench”) - See “What is Sage X3 performance measurement tool” (Article 75064)

• Timing Trace or Engine trace logs

• SQL Server trace

• For Web Service issues, obtain the “Technical information” from the Web Service responses - Outside of Sage X3

• Operating System statistics

• SQL Server statistics

• Virtual Server statistics

User perspective

• Iterate through with the user what they do and when the performance is poor, until a clear picture emerges of the exact nature and scope of the reported issue

• e.g. is it a particular account number that causes an account enquiry to be slow, a particular date range, do other users have same issue, etc.

• Application perspective

• e.g. Timing trace shows big wait in one procedure. Engine trace highlights some SQL that seems to take long time to return a few rows, SQL trace also backs this up. Can see logical locks in X3

• System perspective

• e.g. When the issue happens, one adonix process peaks CPU on the X3 Application server and lot of activity in the database

Research for known issues

• Use all the resources available to look for known issues

• Blog article Sage X3 Support: Where can I go to find out stuff?

• Points to Knowledge Base, Blogs, Forums, etc

• Also check “Patch finder