

# Performance index

## Introduction

Running Sage X3 requires a platform and a technical infrastructure able to execute with good performances. As the infrastructure can be complex and based on multiple servers which might be virtualized connected through network with different bandwidth, running on a database that can be split across several disks, there can be many reasons why a platform is not operating at the expected level of performance, even if the hardware seems up-to date.

It is therefore critical to identify as soon as possible performance issues and bottlenecks to avoid having to react on an operating environment with many unsatisfied users.

This performance index function is done to help you prevent such issues. It must be run on the X3 reference folder, on the target environment where the operations will run. It performs typical CRD operations and returns a global performance index (the lower the better).

According to the value of the performance index, you will have an idea of the adequation of the technical platform with the minimum performance expected to successfully run Sage X3.

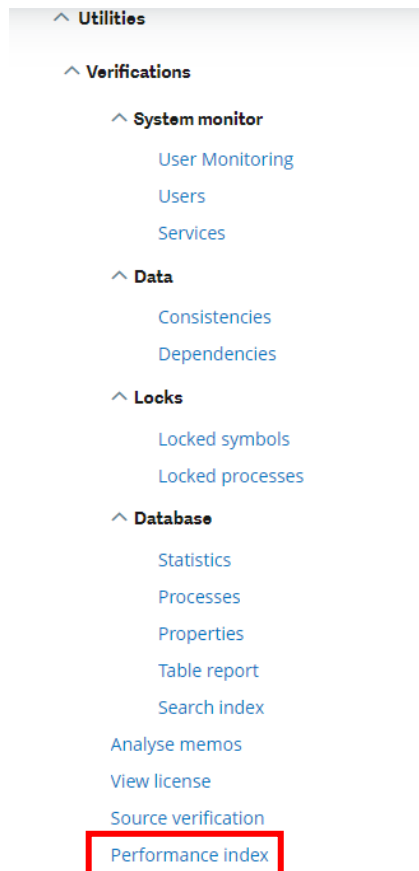
If the performance index does not return a good value, you should investigate across all the parameters (especially the virtualization parameters, the way the database volumes are split, the network connection between the servers).

We strongly recommend launching this function just after the installation of Sage X3 on the final operating environment, and to not start operating this environment with your final users before being sure the minimal requirements are met.

Even if the infrastructure pre-requisites are met after installation, it can be interesting to launch this function later during the operations. The function provides a detailed log and can be executed regularly as a batch task. So, you can establish a baseline during quiet times first, and then launch it during business hours to help assessing if the system can withstand the load.

## Manual launch of the function

This function is in the Development / Utilities / Verification menu of Sage X3:



When launched, the function displays a table containing the result of the previous runs if some have already been done. The table looks like this:

The screenshot shows the 'Performance index' table in Sage X3. The table has the following columns: L..., ID, Date + UTC time, Server, Database version, Performance index, Ph..., L..., P..., L..., P..., L... The table contains three rows of data.

	L...	ID	Date + UTC time	Server	Database version	Performance index	Ph...	L...	P...	L...	P...	L...
1		00001	2021-01-21T16:26:38Z	2fc754d5947b	Oracle Database 12c Standar	114	5	5	5	5	5	4
2		00002	2021-01-21T16:35:11Z	2fc754d5947b	Oracle Database 12c Standar	120	4	5	5	5	5	5
3												

The important information is here:

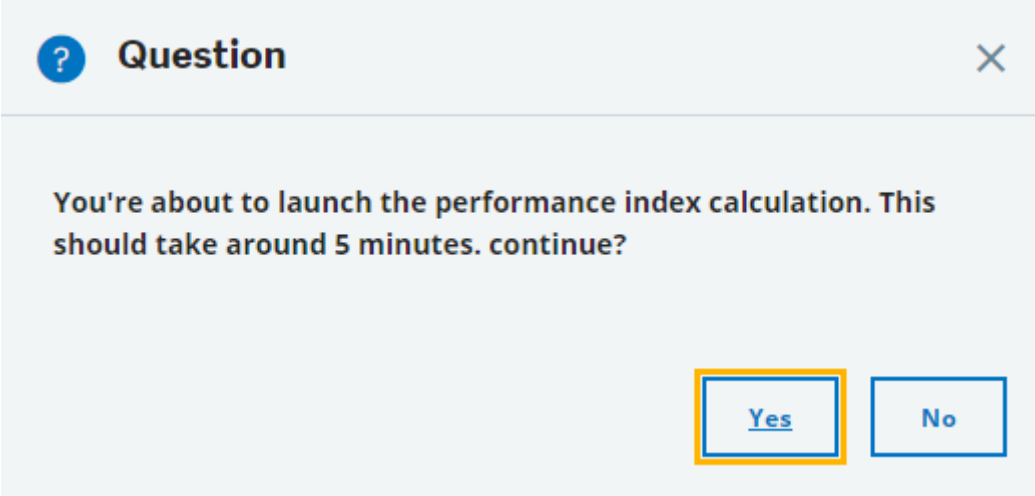
- The date / time of the execution.
- The global performance index.

Clicking on the icon at the beginning of the line returns the complete log of the execution. This is a log file that contains lines such as:

```
*****
SAFE X3 DATABASE I/O BENCHMARK END : 16:28:52
*****
= LEGACY PERFORMANCE INDEX: 114 seconds (113752 milliseconds).
      READ: 19 seconds
      CREATE YYYYY01 TABLE: 1 seconds
      WRITE: 35 seconds
      ERASE: 57 seconds
      CLEAN YYYYY01 DICTIONARY: 2 seconds
-----
= NEW GLOBAL PERFORMANCE INDEX: 102000 milliseconds.
      READ: 19363 milliseconds.
      WRITE: 30055 milliseconds.
      ERASE: 52582 milliseconds.
*****
```

The “legacy performance index” (here 114 seconds) is the important value (that is repeated in Performance index column of the grid). The other values can be useful to have a more detailed interpretation of the results in case of unsatisfactory index and might be requested by the support team.

To launch a new execution, use the *Execute* link on the right panel. This displays the following question box. Answering *yes* will launch the process, add a line in the execution table, and display the logfile.



The

## Results interpretation

The global performance index interpretation depends if you are in a multi-tier installation or a single-tier one. The index values ranges defining the acceptable platform are defined in the following table:

<b>Run-time and database on different servers</b>	<b>Run-time and database on the same server</b>
< 80 Outstanding	<60 Outstanding
80 < Excellent < 150	60 < Excellent <150
150 < Good < 190	100 < Good < 140
190 < Average < 260	140 < Average < 200
>= 260 review architecture	>= 200 Review architecture

Customers explicitly requiring performance need to be operating in an environment in the Excellent range. If the performance index is not satisfactory, do not start operating the environment with real users: they will have a bad user experience.

## Export of the result

An export feature available from the right panel (*Dedicated export*) generates a csv file that you can download. This may be useful if a support team asks you for more information when a performance issue is encountered.

## Batch execution

A batch task called AIOBENCH is provided to allow you to execute the performance index computation in batch mode.

If you want to establish a performance baseline, you can even use a recurring task AND a workflow to be notified in case the value is above what it should be. This can be a preventive measure of a more general problem.

Don't forget that this task stresses your server by adding an important workload during a short period of time. So, this tool should only be used when a performance diagnose is expected.