

Test System Build Diary

2021 R4(V12 Patch 28) Single server installation

Disclaimer

This document is provided "as is" and is for your guidance and educational purposes only. It does not replace the Online documentation, nor is any warranty expressed nor implied for the steps described herein.

Document Information

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Introduction

What is a "Build Diary"

A Build Diary simply describes the steps taken by Sage Support to perform a task or tasks on our internal test systems. Build diaries could be created for major multi-node installations but may also just be describing the steps taken when installing a small hotfix, or anything in-between.

Why is this being shared

It may be useful for you to see the steps we have taken to create or implement some feature or installation, as this may highlight "gotcha's", issues encountered or just give you some guidance if you are planning something similar yourself.

You could potentially use these documents as the base for your own "Workplan document" (Described in "Overview of patching X3 and supporting technologies" <https://www.sagecity.com/gb/sage-x3-uk/b/sage-x3-uk-support-insights/posts/sage-x3-technical-support-tips-and-tricks---march-2021-index>) when you are planning your own activities

Target Audience

This document is aimed at Sage X3 Certified Technical consultants. Sage prescribe that X3 system installation, maintenance, migrations, etc. should be performed by suitably qualified Sage X3 consultants. The prerequisite consideration would be for them to have the latest "Sage X3 Certified Technical Consultant" certification. You can read more about the Sage X3 qualifications and requirements in Sage University (<https://sageu.csod.com/catalog/CustomPage.aspx?id=20000242#tc>)

Additional things to note

- This document does NOT purport to illustrate "best practice" for the task being described
- The steps described will not necessarily be for a "perfect" task, as there may have been issues that needed to be overcome, worked around, or ignored
- The Sage internal test system has network and hardware configuration specific to Sage
- The Sage internal test system does not necessarily include a Windows Domain and has Sage sandbox specific Windows security setup, so operating system permissions are generally not discussed
- If you intend to use these notes as a guide for your own activities, use with caution and perform your own testing to ensure the described steps are suitable and identify any additional considerations that apply to your own situation
- Ensure you only install and use software you are licensed for
-

What does this Build Diary describe?

This build diary primarily describes the installation and configuration of Sage X3 components needed to create a single server environment for testing purposes

- Windows Server 2019
- SQL Server 2019
- Sage X3 version 2021 R4

2021 R4 – Single Server Installation

Objective

The objective of this build diary is to document a single server install of Sage X3 2021 R4 that can be used for testing purposes.

[Documentation to use for planning and execution of this task](#)

[Sage Online documentation](#)

Overall V12 documentation

<http://online-help.sageerp3.com/erp/12/public/index.html>

Pre-requisites

[http://online-help.sageerp3.com/erp/12/public/Prerequisites-\(Last-version\).html](http://online-help.sageerp3.com/erp/12/public/Prerequisites-(Last-version).html)

http://online-help.sageerp3.com/erp/12/public/prerequisites_overview.html

Installation documentation

http://online-help.sageerp3.com/erp/12/public/getting-started_sage-erp-x3-installation-procedure.html

Application Server: <https://online-help.sageerp3.com/erp/12/staticpost/installing-the-application-server/>

Console: https://online-help.sageerp3.com/erp/12/public/configuration-console_console.html

Sage Knowledgebase articles or Blogs

Additional notes when installing Application Cluster

<https://support.na.sage.com/selfservice/viewdocument.do?externalId=109651>

Additional notes when upgrading Elasticsearch

<https://support.na.sage.com/selfservice/viewdocument.do?externalId=99424>

New feature in 2021 R3: Multiple print server instances <https://www.sagecity.com/gb/sage-x3-uk/b/sage-x3-uk-support-insights/posts/new-feature-in-2021-r3-multiple-print-server-instances>

The starting architecture and notes

Single Windows Server 2019 server

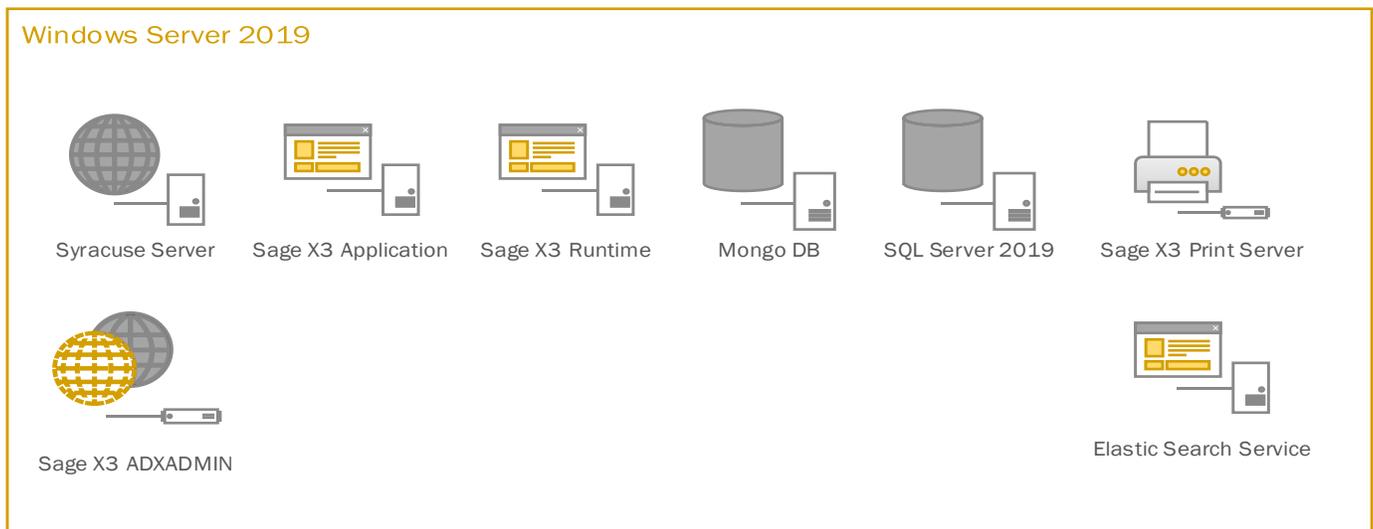
Software already loaded:

- Windows Server 2019
- OpenJDK 1.8.0_282
- Microsoft Edge, Firefox and Chrome browsers
- 7-Zip 19.00

Windows users setup (Local users)

- “x3admin” for installation and management
- “X3run” for service runtime

Target architecture (Sage X3 2021 R4)



Initial steps

Prerequisite's check

Make sure the server meets the requirements listed on

https://online-help.sageerpx3.com/erp/12/public/prerequisites_overview.html

Update Firefox, Chrome, and Edge to make sure I'm on the latest browser versions

Check Disk configuration

Check Server disk space and configuration meets the requirements

Devices and drives (4)



T: This is where the Sage components will be installed

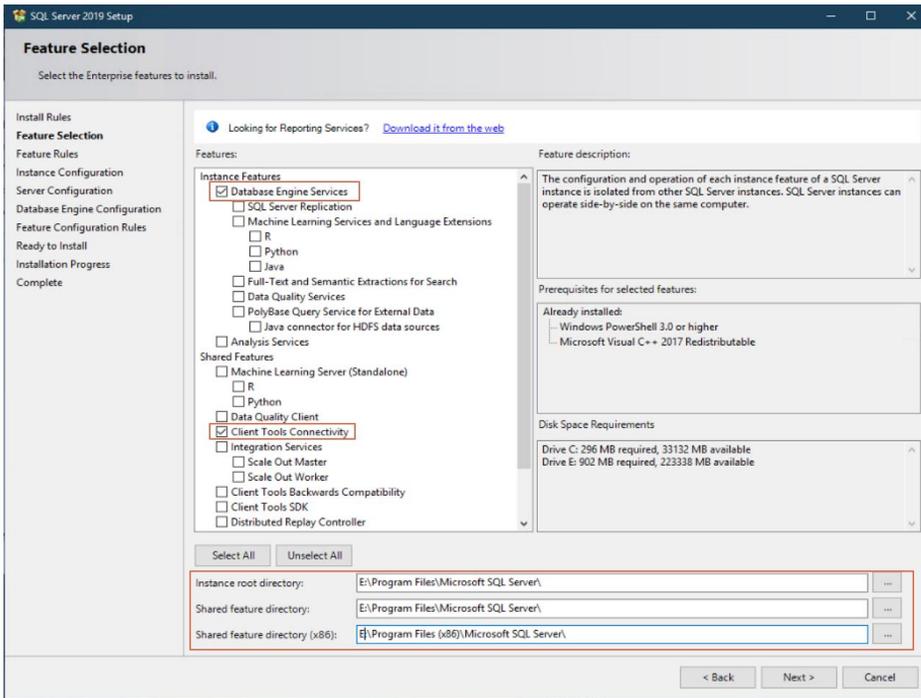
E: SQL Application and database location

D: TempDB – Drive for the SQL temp database

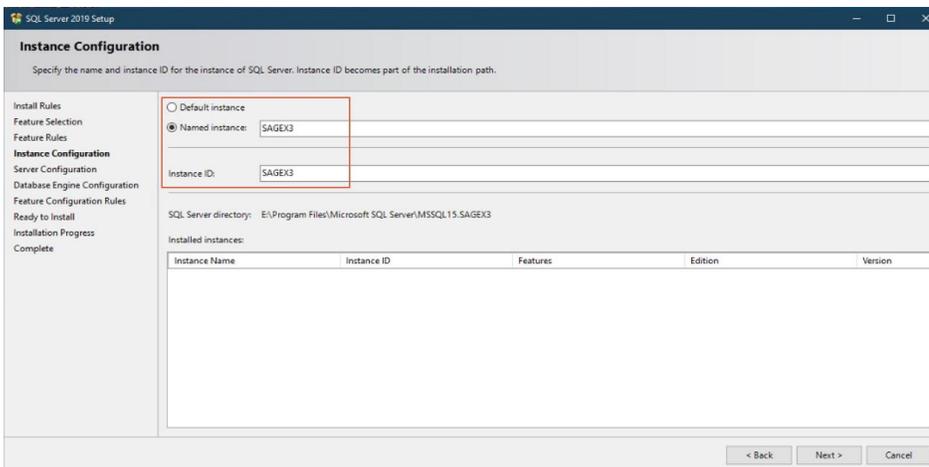
Installation of Components

Installation of SQL Server 2019

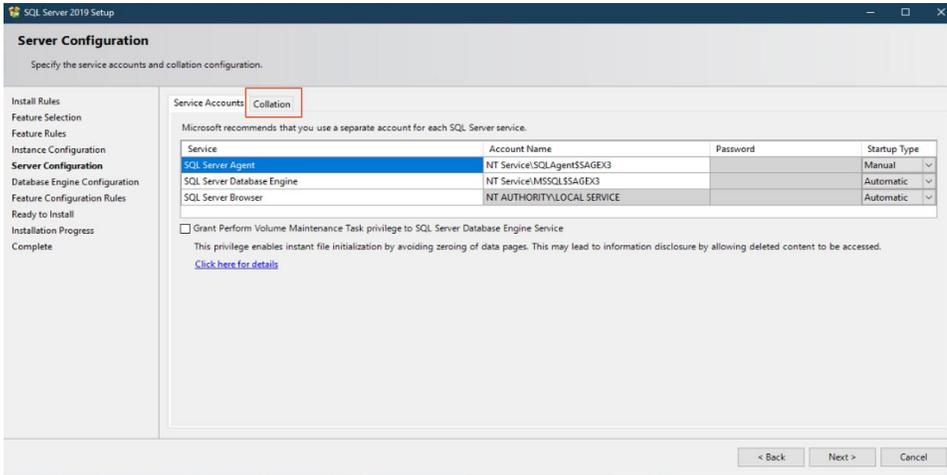
1. Mount the SQL Enterprise ISO file and execute setup.exe and select features instance features & installation directory



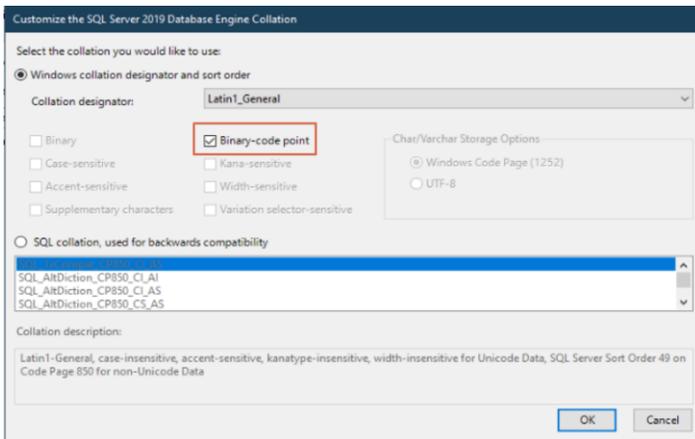
Name Instance SAGEX3



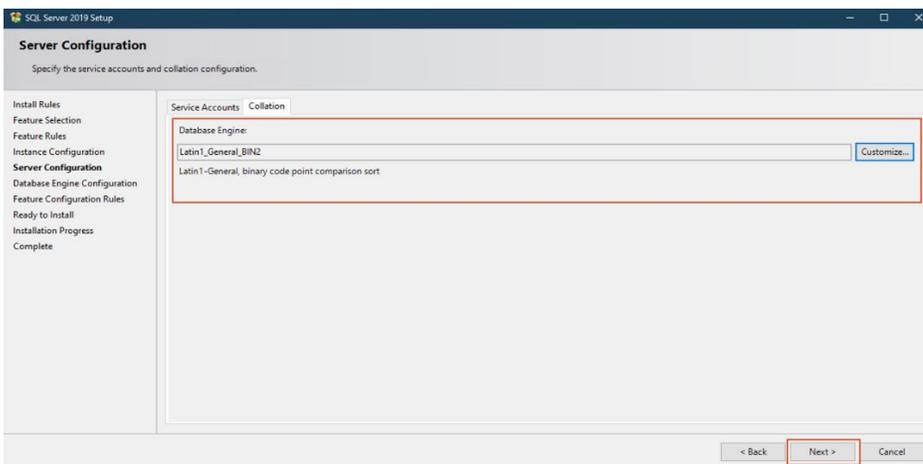
Specify collation



Latin1_General - Binary

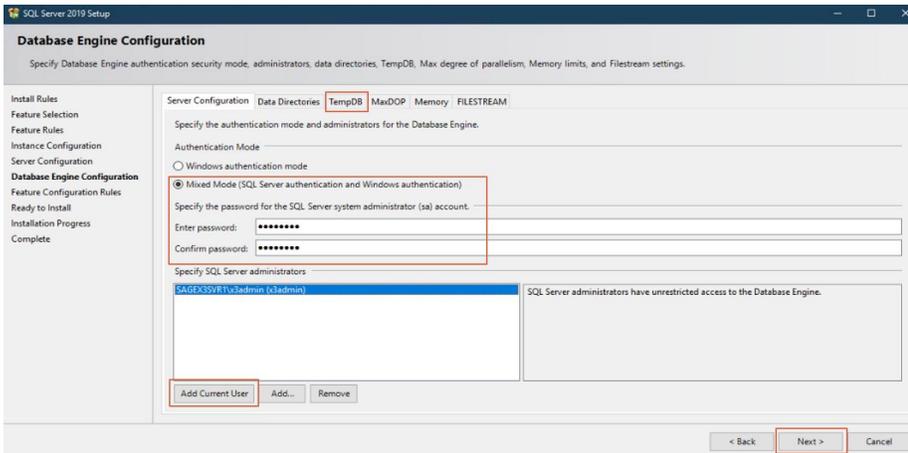


Confirm Latin1_general_BIN2 is specified

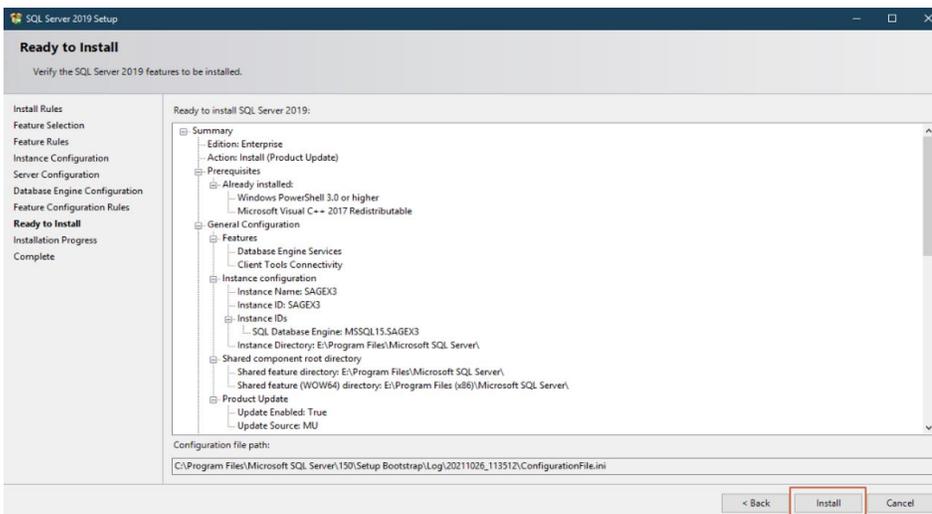
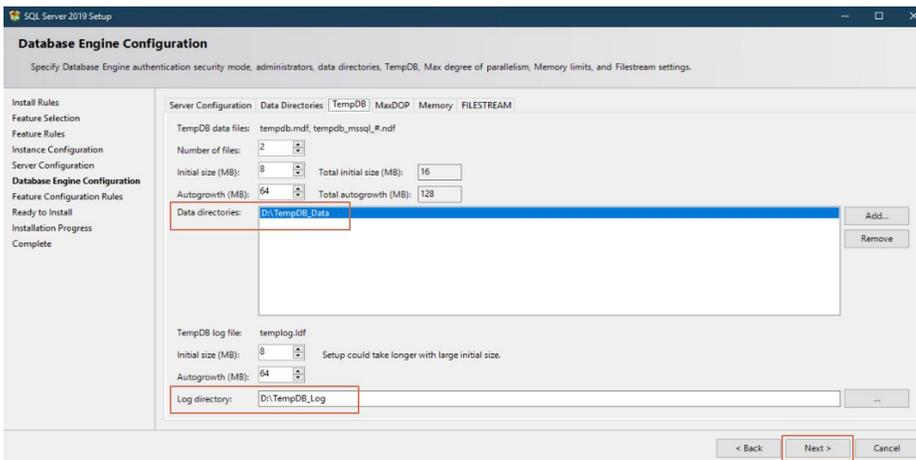


Specify SA password & add current user as SQL administrator

Updated:15/11/2021



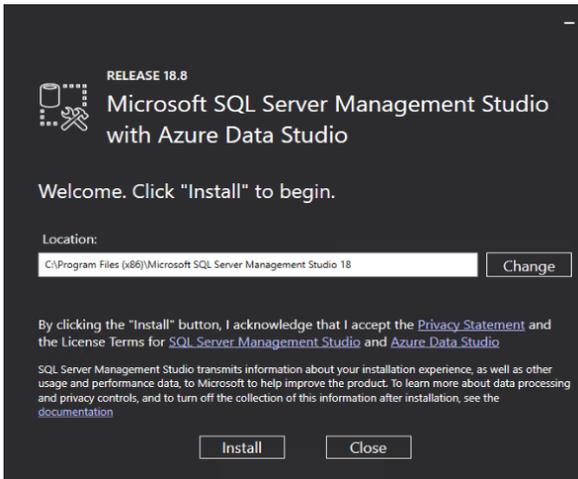
Specify Temp DB location



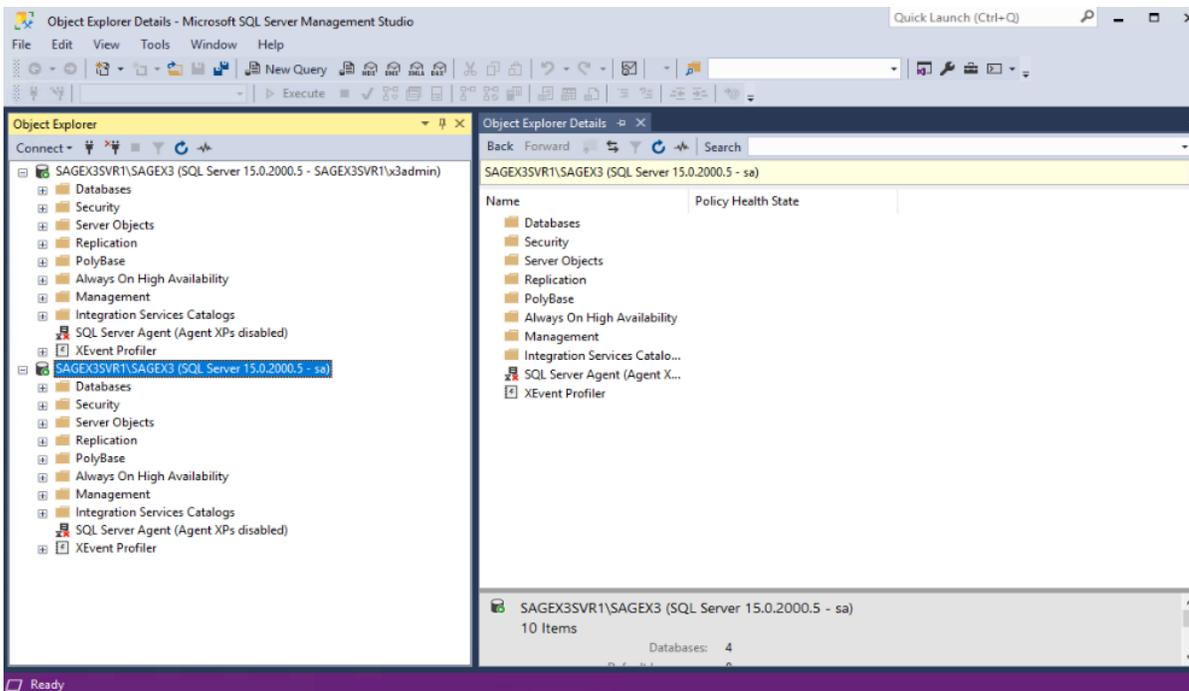
Installation of SSMS

Execute "T:\Software\SSMS18\SSMS-Setup-ENU_18.8.exe"

Note: Later versions of SSMS Maybe available it would be recommended to use the latest



Launch SSMS and test you can connect to the SQL instance we have deployed

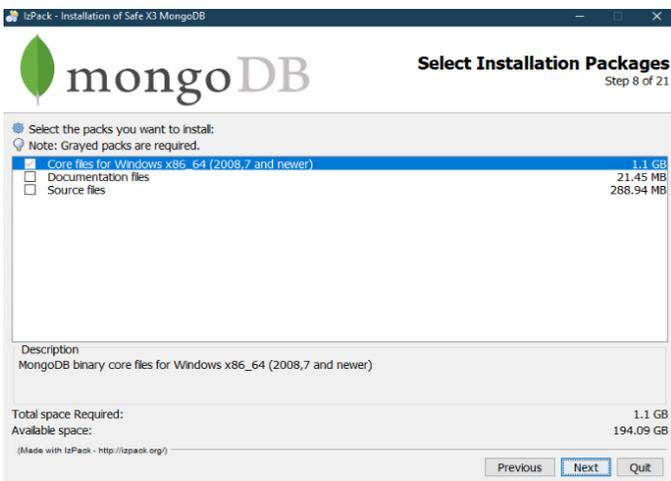


Installation of Mongo DB

Launch the Mongo DB installation from the Sage X3 ISO file

Specify installation path

Updated:15/11/2021



Specify installation path for service and components



Specify patch for certificates



izPack - Installation of Sage X3 MongoDB

mongoDB **User Data**
Step 10 of 21

Service configuration

The server uses and accepts only SSL encrypted connections.

Path for certificates storage area:

Please choose option for certificate installation :

Simplified certificate installation

Use an existing certificate

(Made with IzPack - <http://izpack.org/>)

Add passphrase for CA & verify



izPack - Installation of Sage X3 MongoDB

mongoDB **User Data**
Step 14 of 21

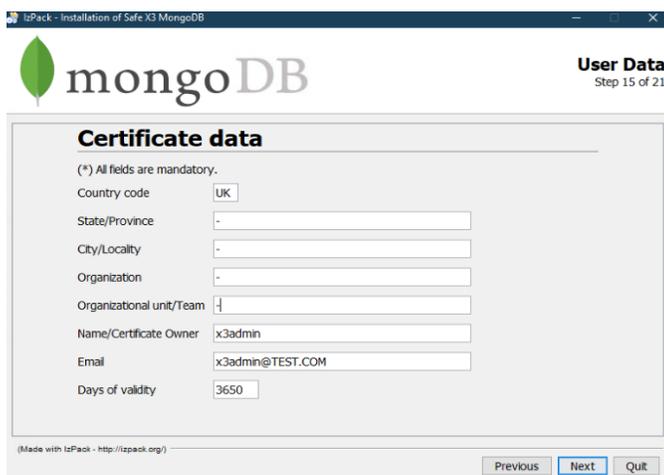
Certificate Authority (CA) setup

Passphrases can contain all alphanumeric and nonalphanumeric characters except : ' and ".

Passphrase of CA:

Verification:

(Made with IzPack - <http://izpack.org/>)



izPack - Installation of Sage X3 MongoDB

mongoDB **User Data**
Step 15 of 21

Certificate data

(*) All fields are mandatory.

Country code:

State/Province:

City/Locality:

Organization:

Organizational unit/Team:

Name/Certificate Owner:

Email:

Days of validity:

(Made with IzPack - <http://izpack.org/>)

Add passphrase for Server & verify

izPack - Installation of Sage X3 MongoDB



User Data
Step 16 of 21

Mongodb server setup

Passphrases can contain all alphanumeric and nonalphanumeric characters except : ' and ".
(* All fields are mandatory.
Please note : In order to start as a service the passphrase will be in clear text in the configuration file of this MongoDB server !

Passphrase of server

Verification

Host name (FQDN)

(Made with IzPack - <http://izpack.org/>)

Previous Next Quit

izPack - Installation of Sage X3 MongoDB



User Data
Step 17 of 21

Service configuration

Import and initialize db with data from another instance.

(Made with IzPack - <http://izpack.org/>)

Previous Next Quit

izPack - Installation of Sage X3 MongoDB



Summary Configuration Data
Step 18 of 21

Installation will proceed with the following settings. Press Next to continue.

Installation Type
New installation

Installation Path
T:\Sage\MongoDBComponent

Chosen Installation Packs
Core files for Windows x86_64 (2008,7 and newer)
Configuration files
Windows service control files

Service creation
mongodb.service.creation=true
component.node.name=MONGO01
mongodb.dir.dbpath=T:\Sage\MongoDBComponent\data
mongodb.dir.logpath=T:\Sage\MongoDBComponent/logs
mongodb.dir.configpath=T:\Sage\MongoDBComponent/config
mongodb.service.port=27017
mongodb.net.ipv6=false

Service creation
mongodb.ssl.enable=true
mongodb.dir.certs=T:\Sage\MongoDBComponent/certs

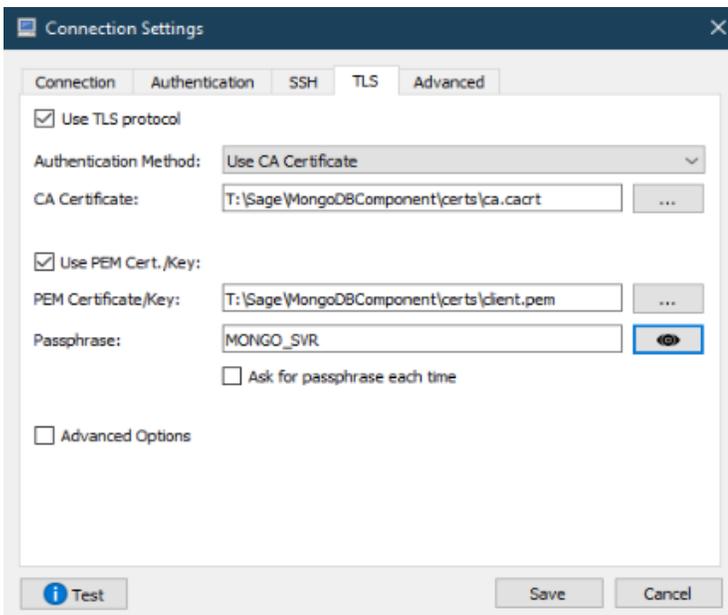
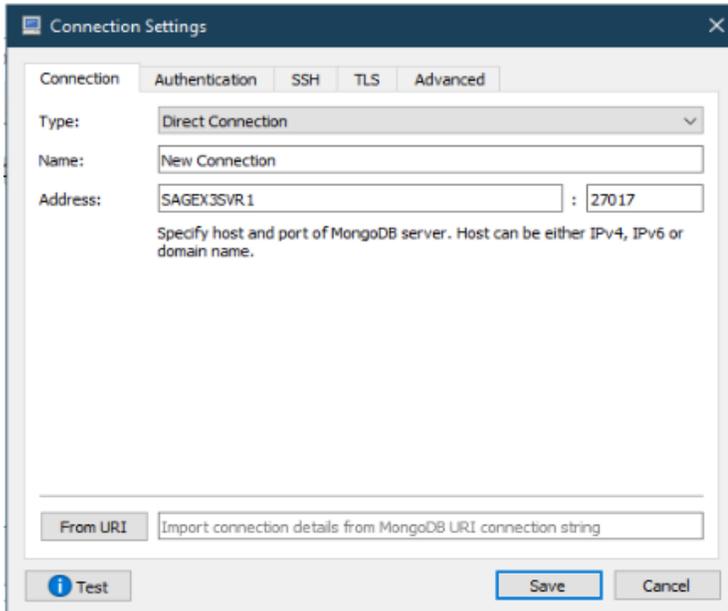
(Made with IzPack - <http://izpack.org/>)

Previous Next Quit

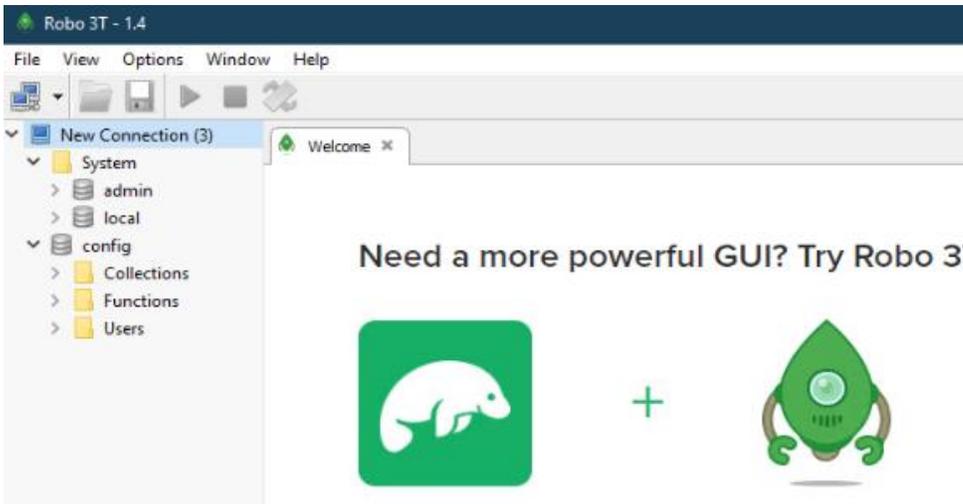
Installation of Robo 3T to test your Mongo DB Deployment

Download ROBO 3T From <https://robomongo.org/download>

Connection string to connect to your Mongo DB instance



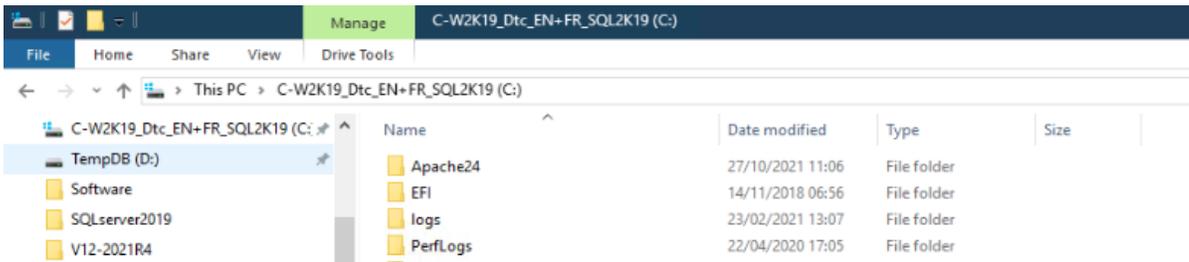
We can see the default databases admin & Local which suggests the installation is ok



Installation of Apache 2.4.51

Download Apache from <https://www.apachehaus.com/>

Extract to C Drive Apache24



```

29 # ServerRoot: The top of the directory tree under which the server's
30 # configuration, error, and log files are kept.
31 #
32 # Do not add a slash at the end of the directory path. If you point
33 # ServerRoot at a non-local disk, be sure to specify a local disk on the
34 # Mutex directive, if file-based mutexes are used. If you wish to share the
35 # same ServerRoot for multiple httpd daemons, you will need to change at
36 # least PidFile.
37 #
38 #
39 #
40 # Define SERVERROOT "C:/Apache24"
41 # ServerRoot "%S{SERVERROOT}"
42 #
43 #
44 # Uncomment below line to enable TLS/1.3 in server.
45 # (Requires OpenSSL 1.1.1 and up)
46 # Define ENABLE_TLS13 "Yes"
47 #
48 #
49 # Mutex: Allows you to set the mutex mechanism and mutex file directory
50 # for individual mutexes, or change the global defaults
51 #
52 # Uncomment and change the directory if mutexes are file-based and the default
53 # mutex file directory is not on a local disk or is not appropriate for some
54 # other reason.
55 #
56 # Mutex default:logs
57 #
58 #
59 # Listen: Allows you to bind Apache to specific IP addresses and/or
60 # ports, instead of the default. See also the "VirtualHost"
61 # directive.
62 #
63 # Change this to Listen on specific IP addresses as shown below to
64 # prevent Apache from glomming onto all bound IP addresses.
65 #
66 #Listen 12.34.56.78:80
67 #Listen 80
68 #
69 #
70 # Dynamic Shared Object (DSO) Support
71 #

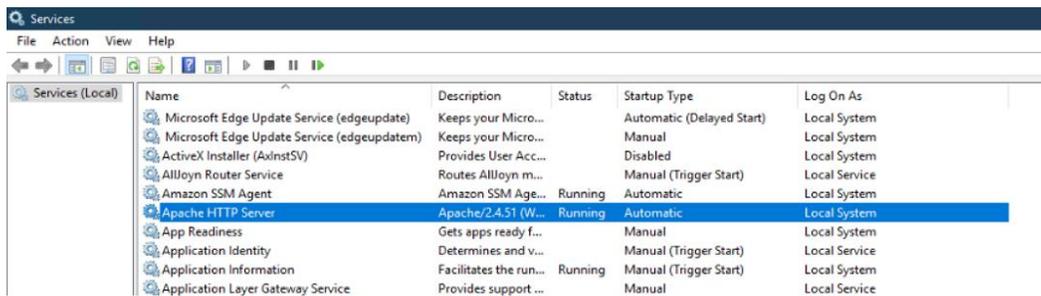
```

Open command prompt and navigate to C:/Apache24/bin

execute

```
httpd.exe -k install -n "Apache HTTP Server"
```

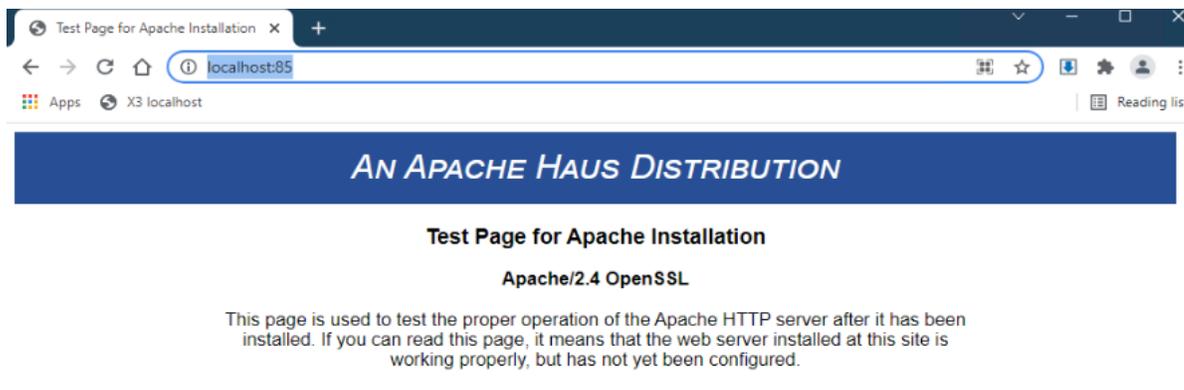
Apache service is installed



Administrator: Command Prompt

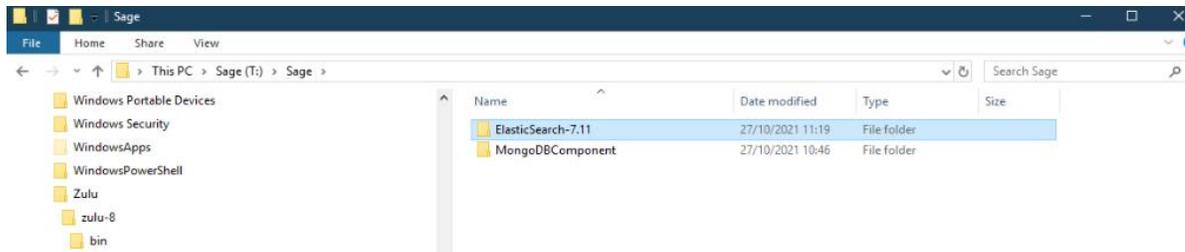
```
C:\Apache24\bin>httpd.exe -k install -n "Apache HTTP Server"
Installing the 'Apache HTTP Server' service
The 'Apache HTTP Server' service is successfully installed.
Testing httpd.conf...
Errors reported here must be corrected before the service can be started.
```

Test Apache install by browsing to



Installation of Elastic Search 7.11

Download the elastic search component from <https://www.elastic.co/elastic-stack/>



Execute to install Elastic Search

REM Set the following variables to suit your environment

```
set "mzNewServiceName=ElasticSearch_7.11"
```

```
set "ES_HOME=T:\Sage\ElasticSearch-7.11"
```

```
set "JAVA_HOME=C:\Program Files\Zulu\zulu-8"
```

REM The following lines should not need to be changed

```
cd /d "%ES_HOME%\bin"
```

```
set "ES_PATH_CONF=%ES_HOME%\config"
```

```
set "ES_START_TYPE=auto"
```

```
set "SERVICE_ID=%mzNewServiceName%"
```

```
set "SERVICE_DISPLAY_NAME=%mzNewServiceName%"
```

```
set "SERVICE_DESCRIPTION=%mzNewServiceName%"
```

```
elasticsearch-service.bat install
```

```
Administrator: Command Prompt
T:\Sage\ElasticSearch-7.11\bin>set "ES_PATH_CONF=%ES_HOME%\config"
T:\Sage\ElasticSearch-7.11\bin>set "ES_START_TYPE=auto"
T:\Sage\ElasticSearch-7.11\bin>set "SERVICE_ID=%mzNewServiceName%"
T:\Sage\ElasticSearch-7.11\bin>set "SERVICE_DISPLAY_NAME=%mzNewServiceName%"
T:\Sage\ElasticSearch-7.11\bin>set "SERVICE_DESCRIPTION=%mzNewServiceName%"
T:\Sage\ElasticSearch-7.11\bin>elasticsearch-service.bat install
Future versions of Elasticsearch will require Java 11; your Java version from [C:\Program Files\Zulu\zulu-8\jre] does not meet this requirement. Consider switching to a distribution of Elasticsearch with a bundled JDK. If you are already using a distribution with a bundled JDK, ensure the JAVA_HOME environment variable is not set.
Installing service "ElasticSearch_7.11"
Using JAVA_HOME (64-bit): "C:\Program Files\Zulu\zulu-8"
Warning: With JDK 8 on Windows, Elasticsearch may be unable to derive correct ergonomic settings due to a JDK issue (JDK-8074459). Please use a newer version of Java.
Warning: MaxDirectMemorySize may have been miscalculated due to JDK-8074459. Please use a newer version of Java or set MaxDirectMemorySize explicitly.
-Des.networkaddress.cache.ttl=60;-Des.networkaddress.cache.negative.ttl=10;-XX:+AlwaysPreTouch;-Xss1m;-Djava.awt.headless=true;-Dfile.encoding=UTF-8;-Djna.nosys=true;-XX:-OmitStackTraceInFastThrow;-Dio.netty.noUnsafe=true;-Dio.netty.noKeySetOptimization=true;-Dio.netty.recycler.maxCapacityPerThread=0;-Dio.netty.allocateDirectArenas=0;-Dlog4j.shutdownHookEnabled=false;-Dlog4j2.disable.jmx=true;-Djava.locale.providers=SPI,IRE;-XX:+UseConcMarkSweepGC;-XX:CMSInitiatingOccupancyFraction=75;-XX:+UseCMSInitiatingOccupancyOnly;-Djava.io.tmpdir=C:\Users\W3admin\AppData\Local\Temp\elasticsearch;-XX:+HeapDumpOnOutOfMemoryError;-XX:HeapDumpPath=data;-XX:ErrorFile=logs/hs_err_pid%p.log;-XX:+PrintGCDetails;-XX:+PrintGCDateStamps;-XX:+PrintTenuringDistribution;-XX:+PrintGCApplicationStoppedTime;-Xloggc:logs/gc.log;-XX:+UseGCLogFileRotation;-XX:NumberOfGCLogFiles=32;-XX:GCLogFileSize=64m;-Xms1024m;-Xmx1024m;-XX:MaxDirectMemorySize=536870912
The service 'ElasticSearch_7.11' has been installed.
T:\Sage\ElasticSearch-7.11\bin>
```

Test elastic search is installed and running by browsing to the following URL

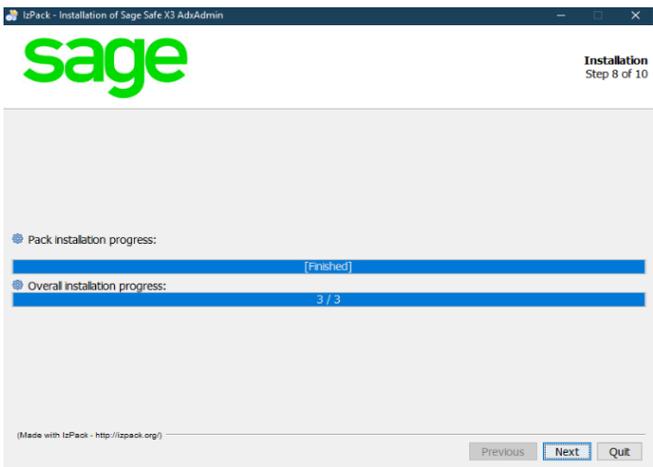
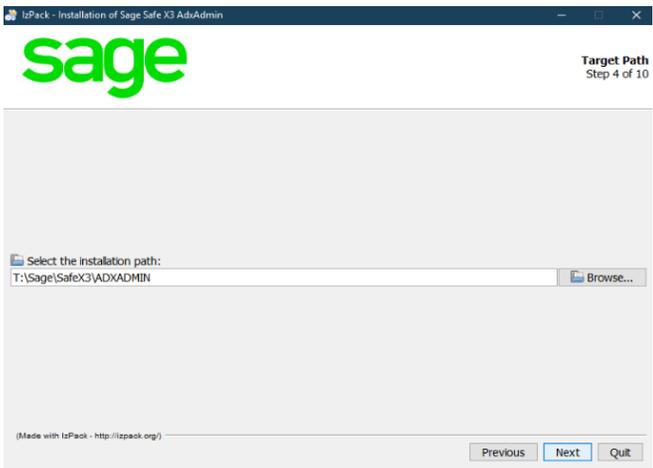
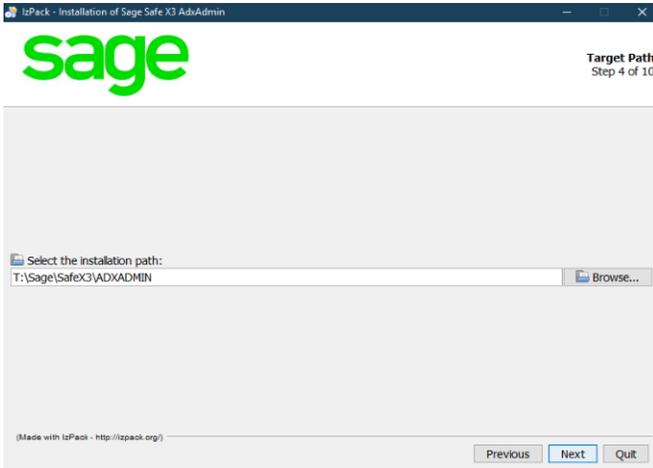


```
{
  "name" : "SAGEX3SVR1",
  "cluster_name" : "elasticsearch",
  "cluster_uuid" : "q86wzulF59iYT4XU4oZrTw",
  "version" : {
    "number" : "7.11.1",
    "build_flavor" : "default",
    "build_type" : "zip",
    "build_hash" : "ff17057114c2199c9c1bbecc727003a907c0db7a",
    "build_date" : "2021-02-15T13:44:09.394032Z",
    "build_snapshot" : false,
    "lucene_version" : "8.7.0",
    "minimum_wire_compatibility_version" : "6.8.0",
    "minimum_index_compatibility_version" : "6.0.0-beta1"
  },
  "tagline" : "You Know, for Search"
}
```

Installation of ADXADMIN component

Launch

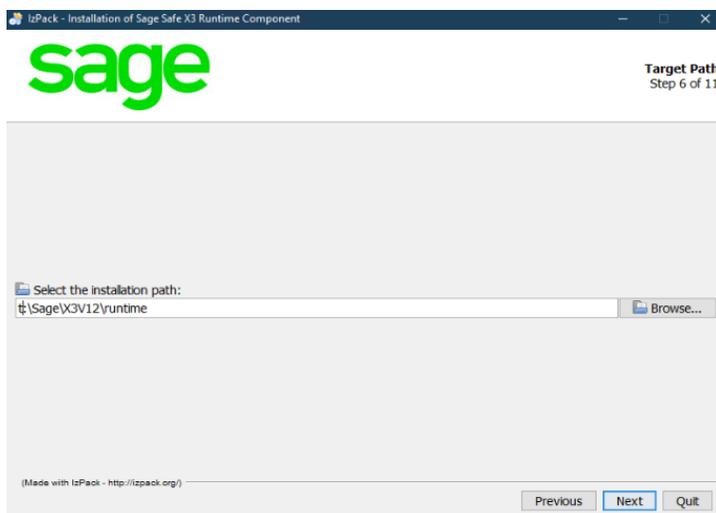
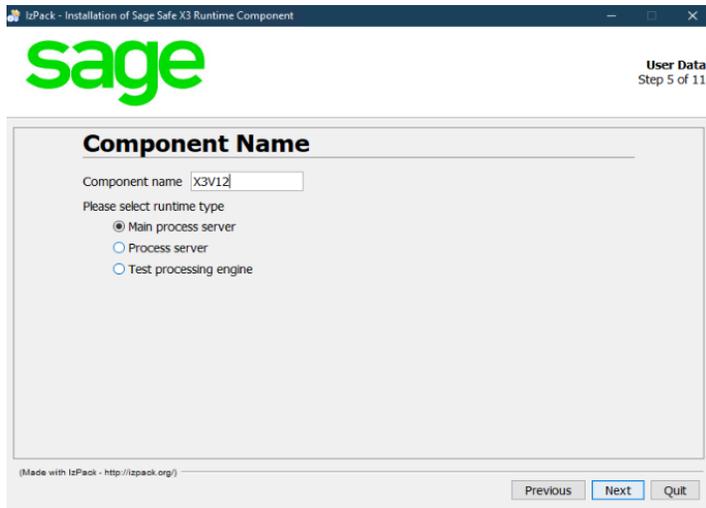
"F:\X3\Installs\AdxAdmin\adxadmin-93.2.50.jar"

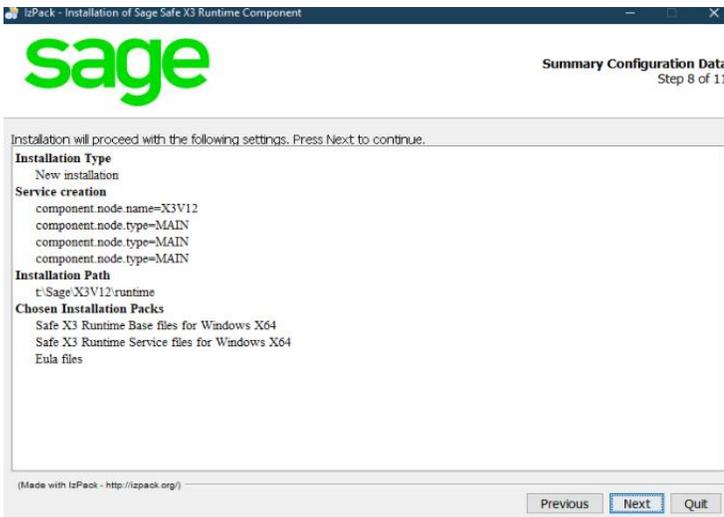


Installation of Sage X3 Runtime component

Launch

"F:\X3Installs\Runtime\runtime-93.2.50.jar"

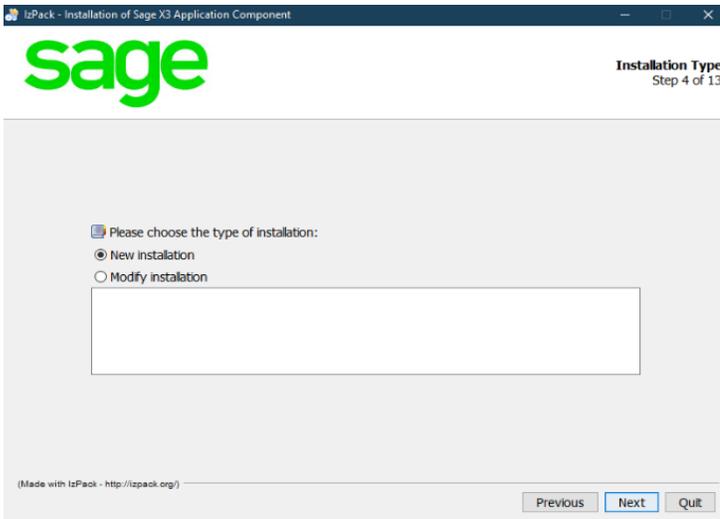


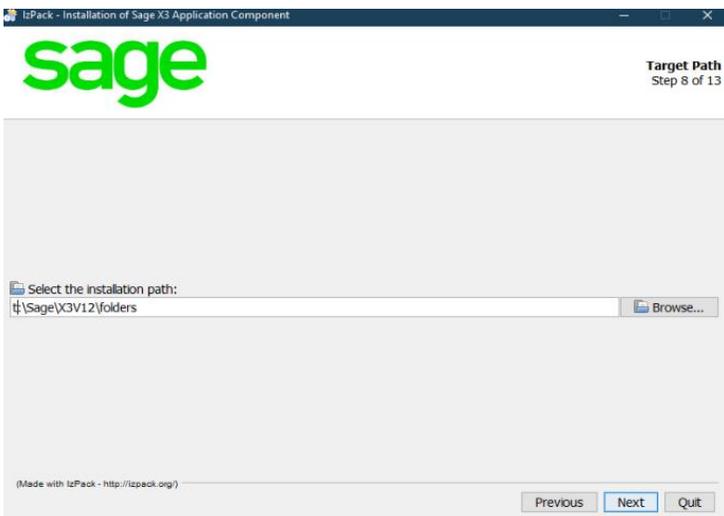
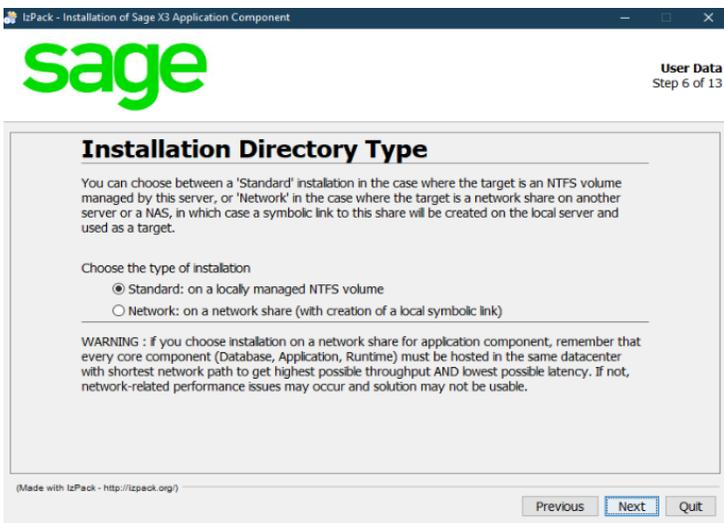
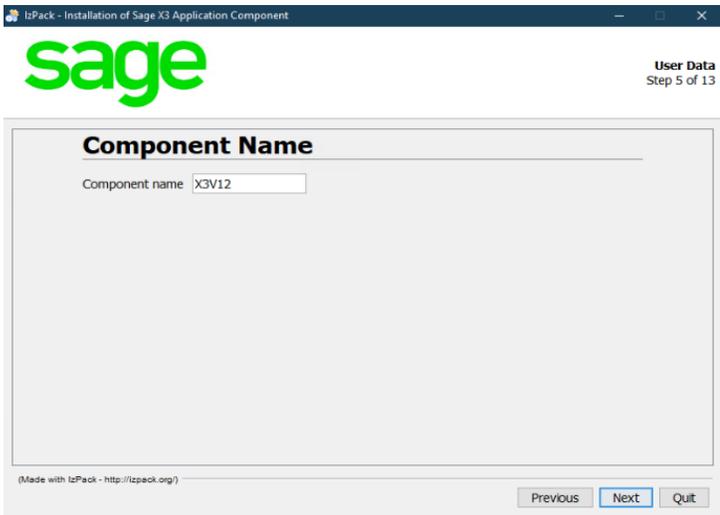


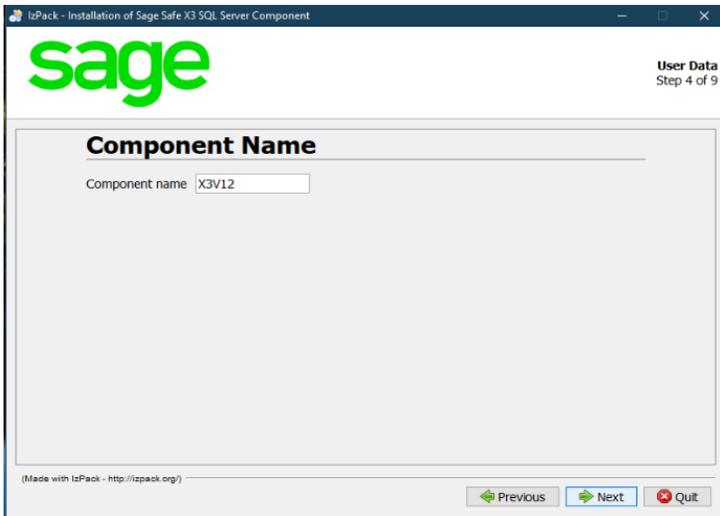
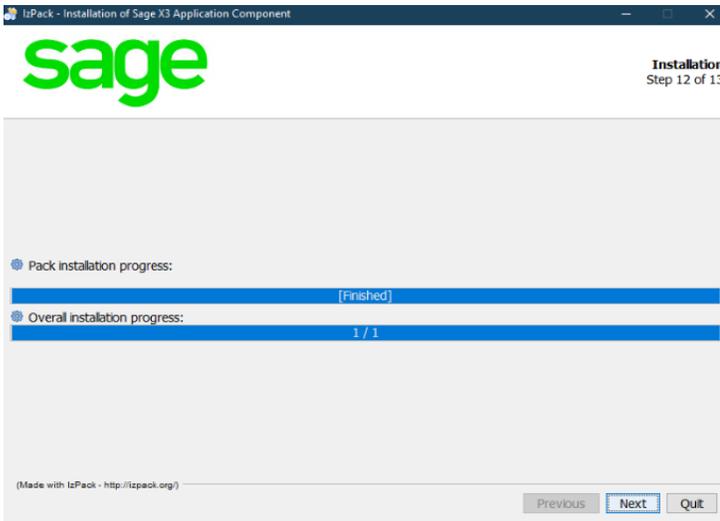
Installation of Sage X3 Application component

Launch

"F:\X3Installs\Application\x3-application-12.0.25.jar"



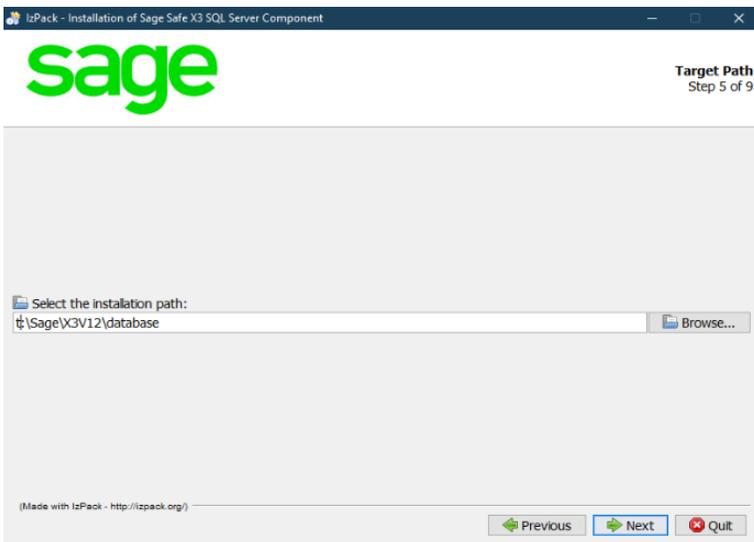
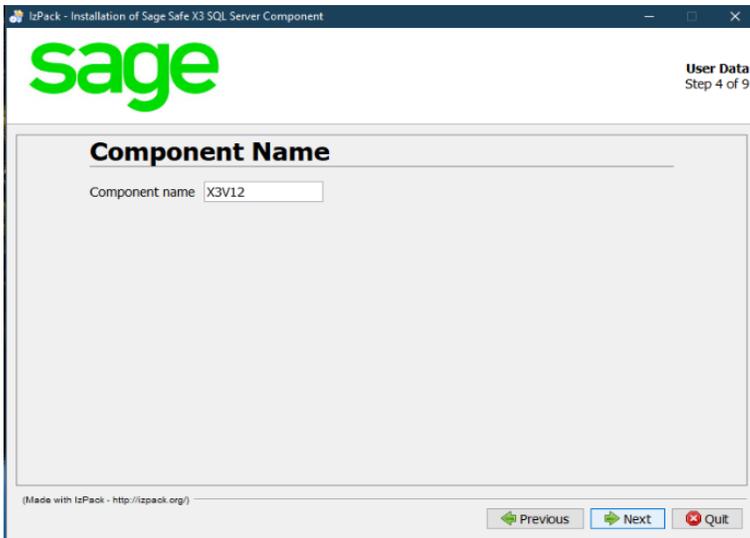




Installation of Sage X3 SQL Component

Launch

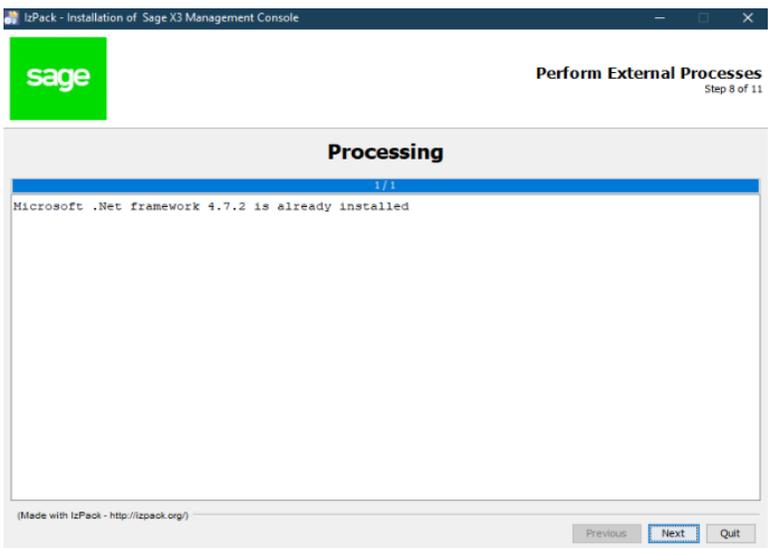
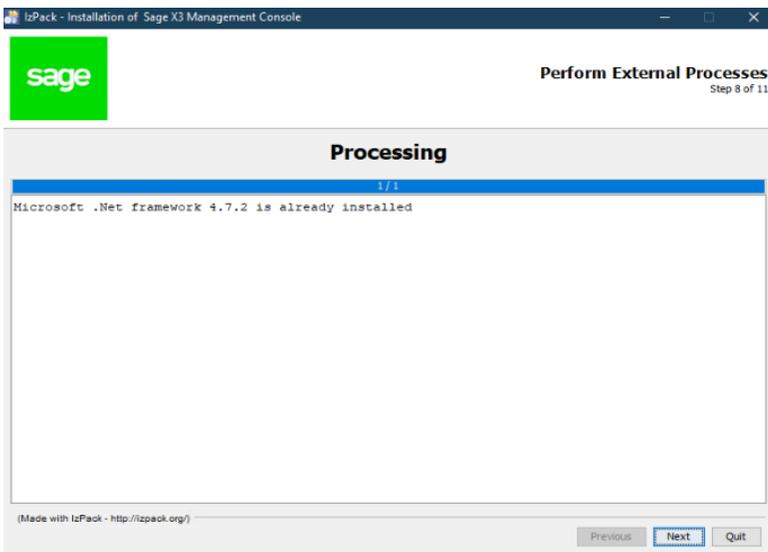
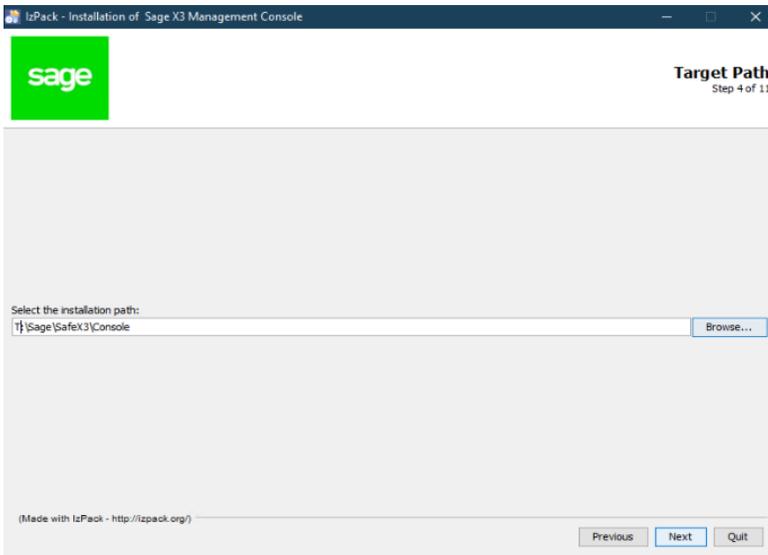
"F:\X3Installs\DbSQL\db-sql-2.0.0-win.jar"



Installation of Sage X3 management Console

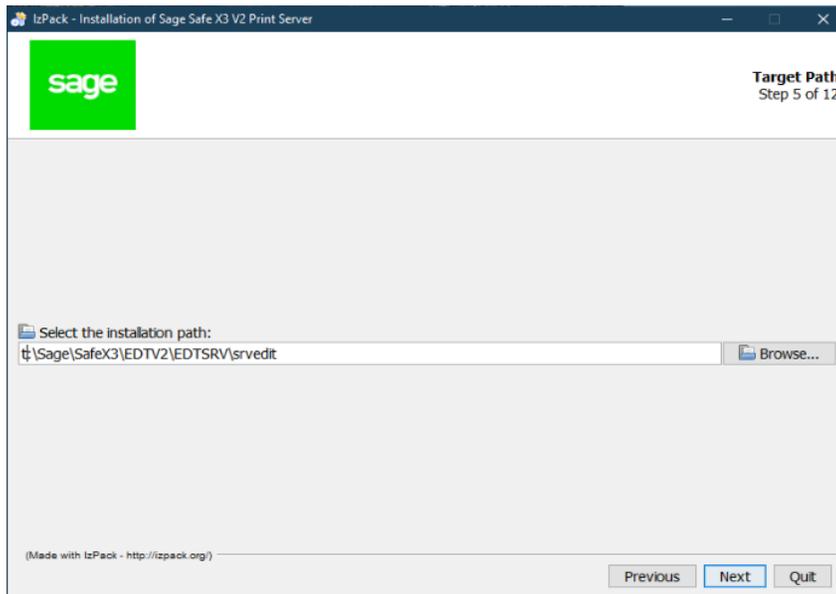
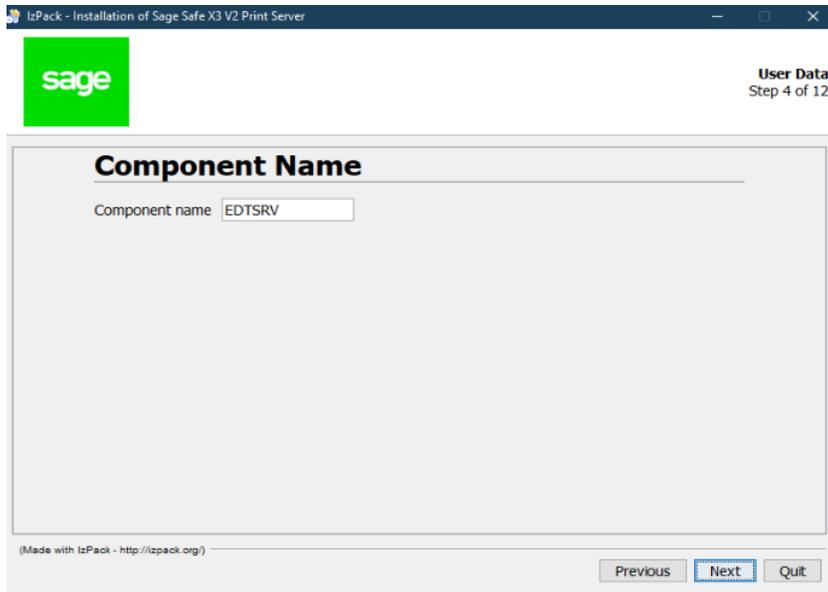
launch

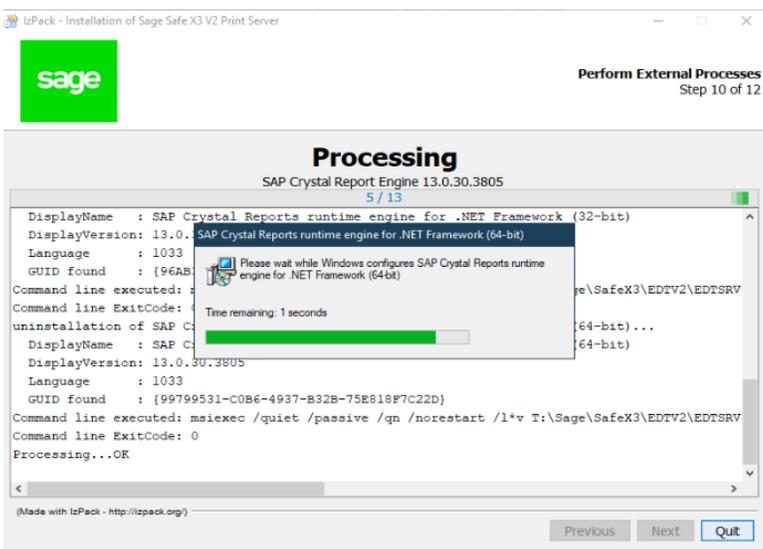
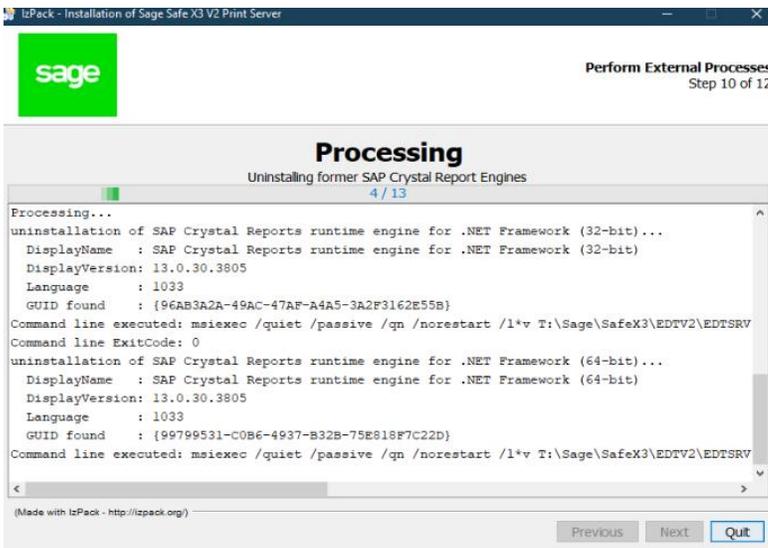
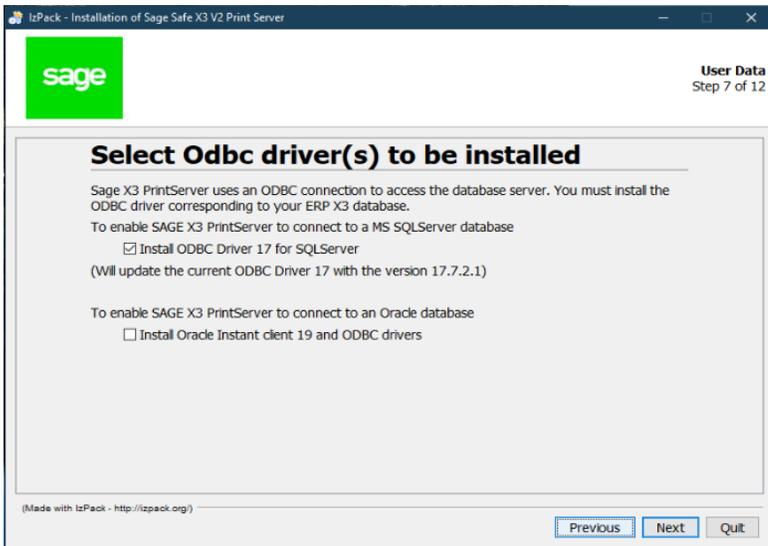
"F:\X3Installs\Console\console-2.49.0.28-win.jar"

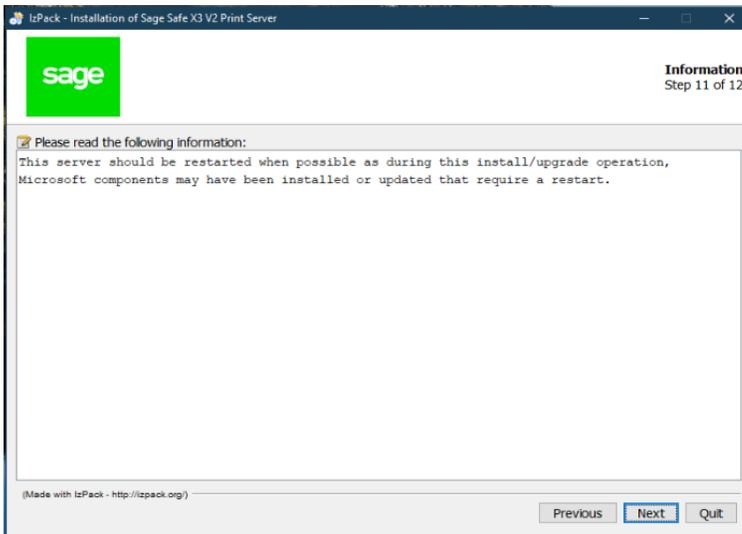


Installation of the Print Server component

"F:\X3Installs\PrintServer\print-server-2.22.0.9-win.jar"



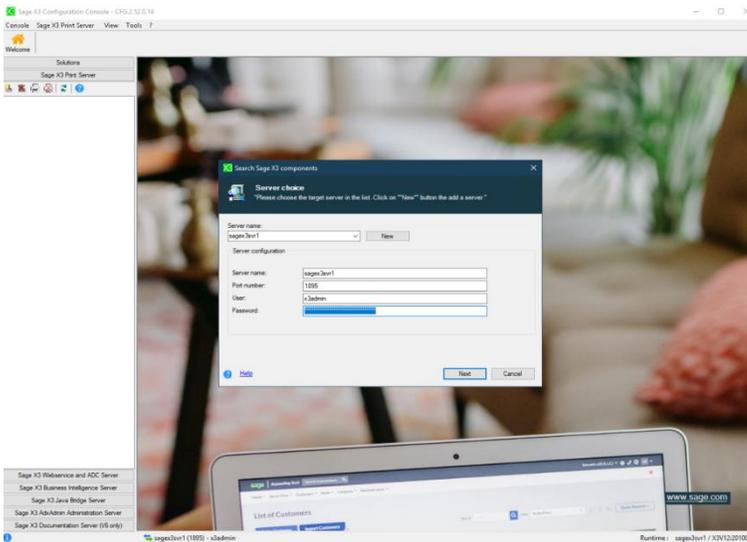




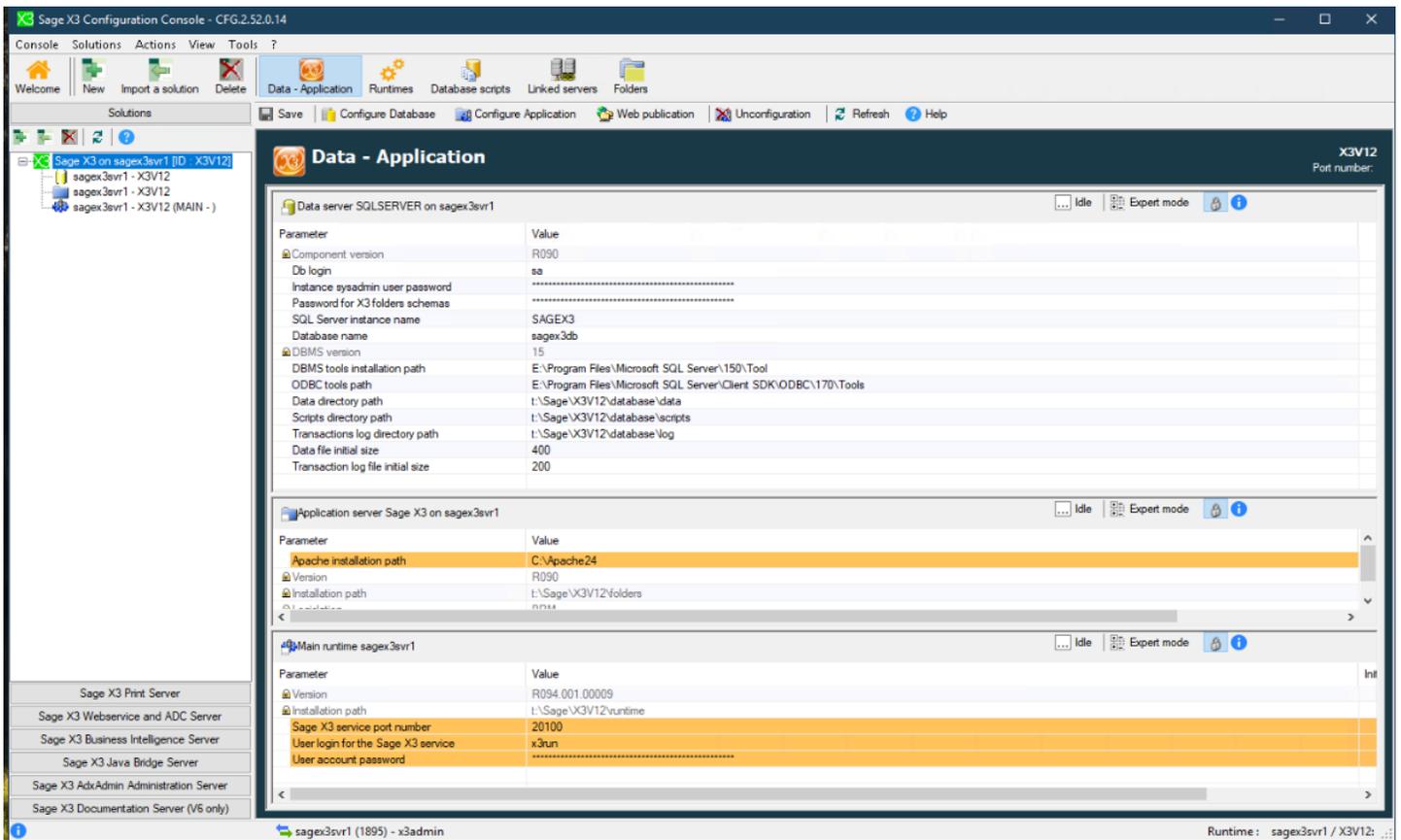
Configuration of Sage X3

Configure solution in the Sage X3 management Console

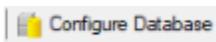
Login with X3 admin



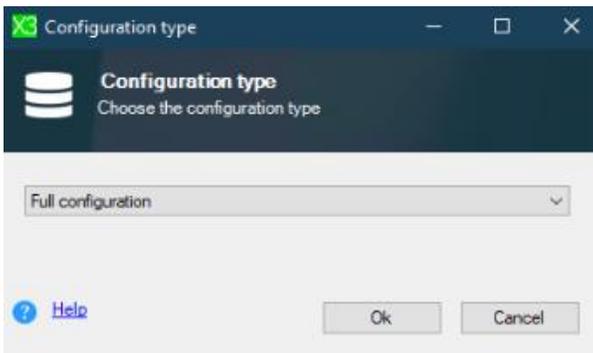
Enter parameters for deployment and configuration of the solution



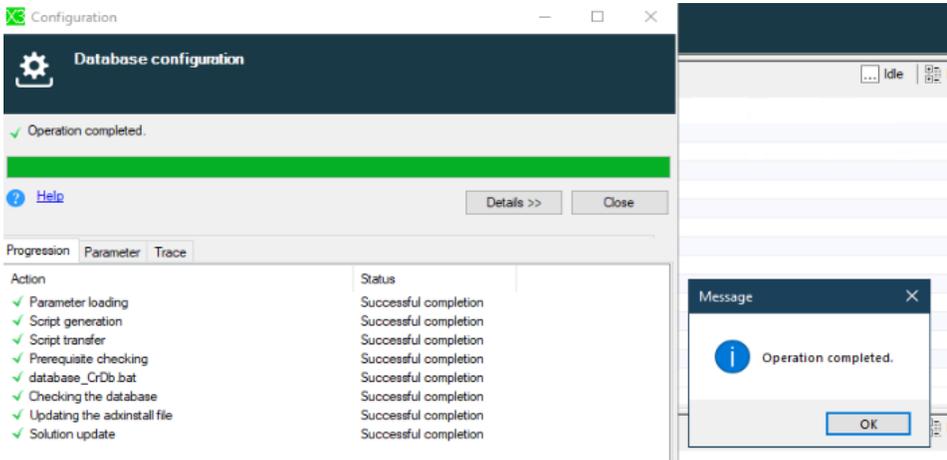
Save and Configure database



Press ok to full configuration



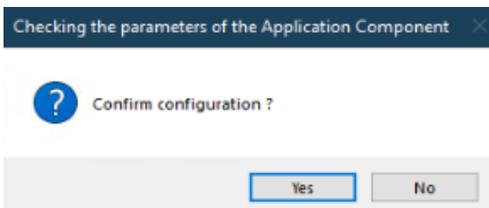
Press ok when operation completes



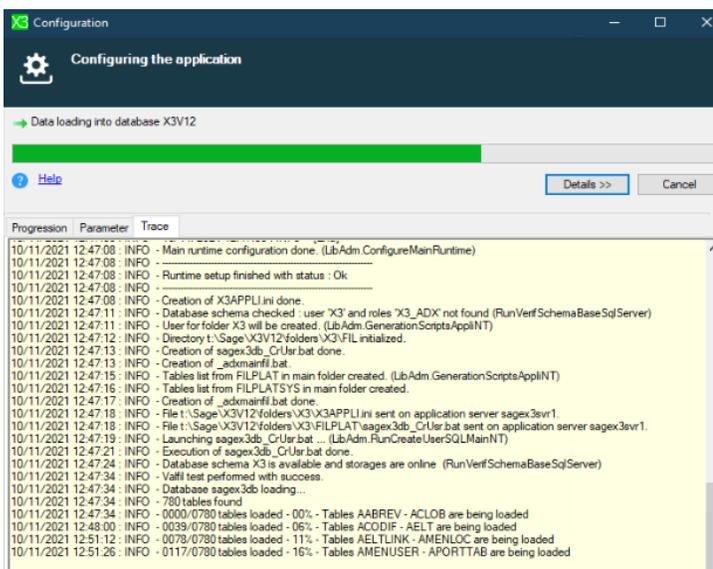
Configure application

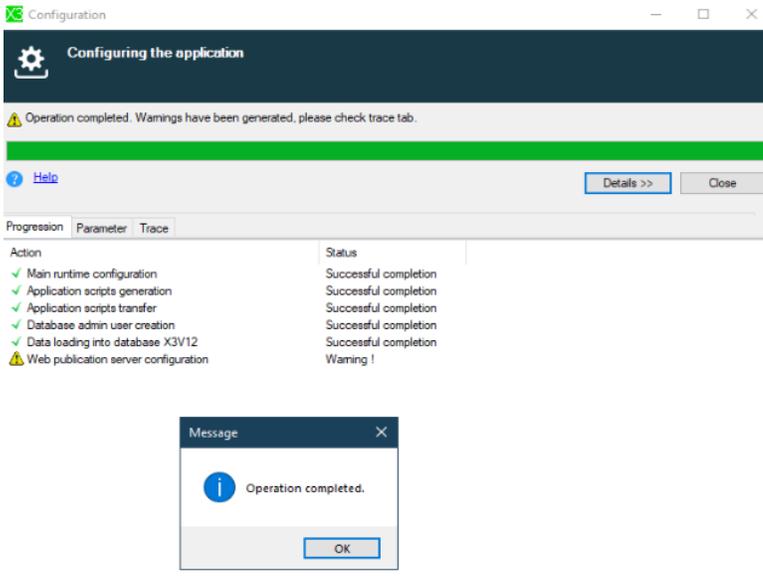


Press yes



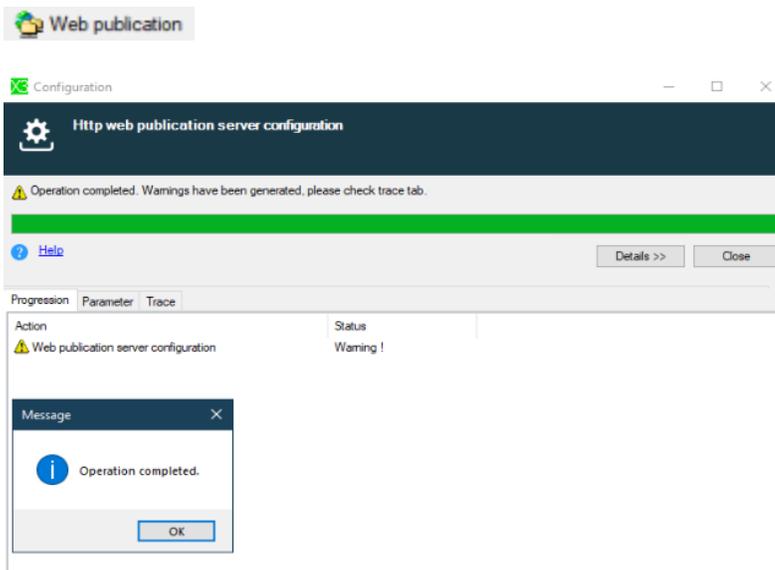
Check the progress on the trace tab





Press ok when the configuration is complete.

Configure web application



Press ok when the operation is complete.

Configure solution in Syracuse

The screenshot shows the 'X3 solution xsv12' configuration page in the Sage X3 administration interface. The page is divided into several sections:

- Information:** Fields for Code (XSV12), Description (XSV12), Solution name (XSV12), Friendly name (The X3 solution name), Solution root directory, and Application (X3 ERP).
- Servers:** Fields for Main server host (sageX3svr1), Main server port (20100), Web server host, Web server port (8080), Certificate, and Batch Server (XSV12). It also includes a checkbox for 'Use Http proxy configuration' and a section for 'BD Server' with 'Enable application cluster' checked.
- Runtimes:** A table listing runtime configurations. The table has columns: Server host, Server port, Tags, tag exclusive, Ban timeout, Blacklisted, Auto config, and Disabled. One entry is shown for 'sageX3svr1' with port 20100 and a ban timeout of 5. Below the table, there are input fields for 'Parallel jobs by runtime during update' (set to 0) and 'Parallel jobs by runtime during update'.
- Endpoints:** A section for managing endpoints, currently showing 'XSV12 / X3'.

Create X3 Endpoint

The screenshot shows the 'Endpoint xsv12/x3' configuration page in the Sage X3 administration interface. The page is divided into several sections:

- Information:** Fields for Name (XSV12_X3) and Description (XSV12 / X3).
- Location:** Fields for Application (X3 ERP) and a description (Application and contract identify a service).
- Server parameters:** A table with columns: X3 solution, Server folder, Reference folder, and Historical folder. The 'X3 solution' is 'XSV12', 'Server folder' is 'X3', and 'Historical folder' is 'X'. A note below states 'Is this endpoint connected to a hit...'. The 'Type' is 'Help Base URL'.
- Administration:** A section for user management with 'Groups' (Super administrators) and 'Roles to profession codes mapping'. It includes two tables for mapping menu profiles to roles and profession codes to roles, both currently showing 'No data to display'.

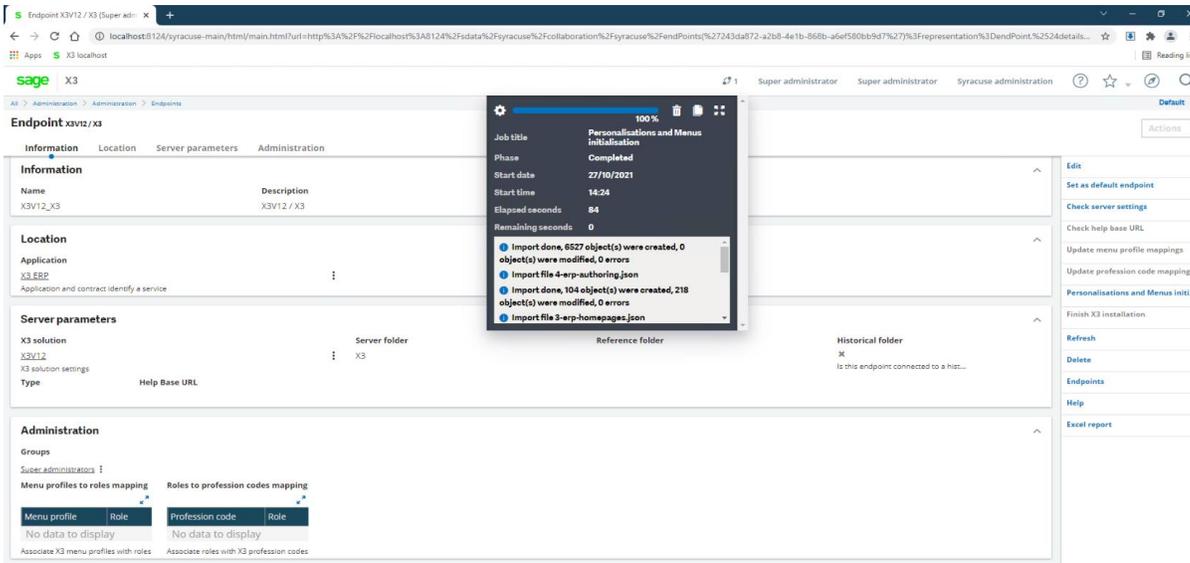
Perform personalization and menu initialization

Navigate to the X3 Endpoint & in the right menu click Personalization and menu initialization

Press Yes on the information message

The screenshot shows the Sage X3 administration interface for endpoint 'X3V12 / X3'. A dialog box titled 'Personalisations and Menus initialisation' is displayed in the center. The dialog contains a caution message: 'Caution : This action will reset the menus and personalisations with original factory values. It must be done only after the execution of a new Application component setup. Otherwise you could overwrite the changes done by the standard updates that you could have applied.' At the bottom of the dialog are 'Yes' and 'No' buttons. The background interface shows various configuration sections like Information, Location, Server parameters, and Administration.

This screenshot shows the same Sage X3 administration interface, but with a progress bar overlay for the 'Personalisations and Menus initialisation' task. The progress bar is at 20%. Below the progress bar, a summary of the task is shown: 'Job title: Personalisations and Menus initialisation', 'Phase: Import file 1-erp-menus.json', 'Start date: 27/10/2021', 'Start time: 14:24', and 'Elapsed seconds: 3'. A detailed log below the summary shows: 'Import file 1-erp-menus.json', 'Import done, 24 object(s) were created, 6 object(s) were modified, 0 errors', and 'Import file 0-erp-init.json'. The background interface is dimmed.

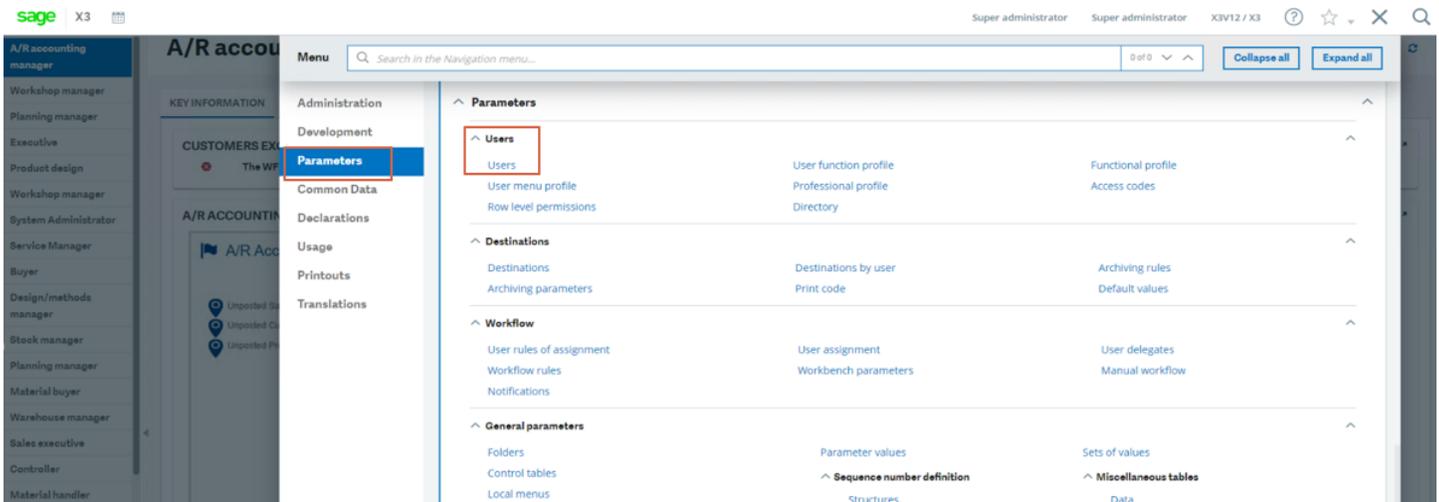


Log out of X3 when the process completes

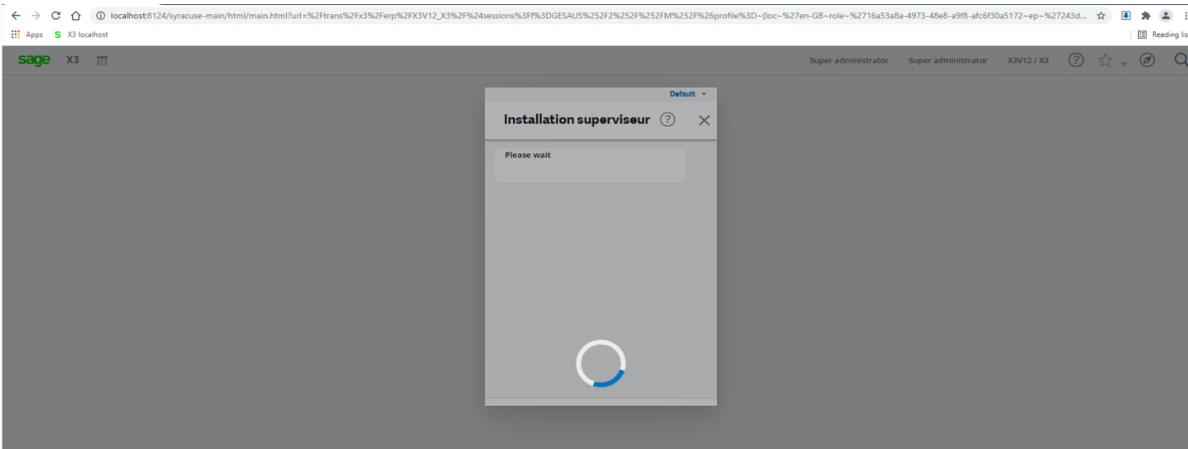
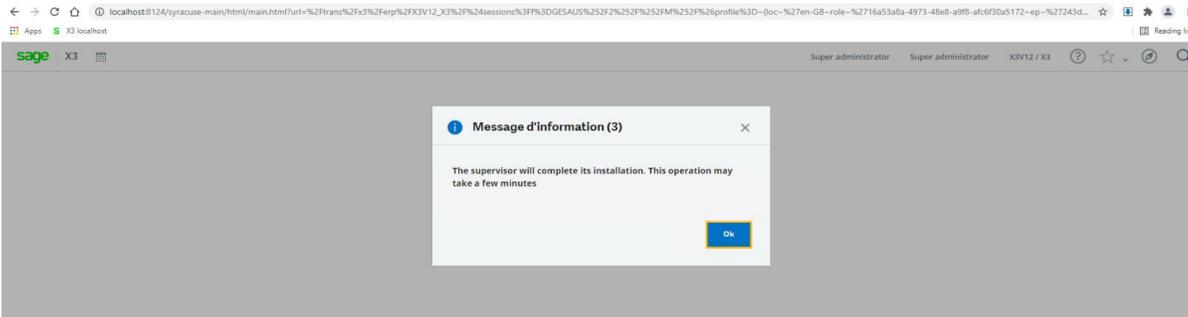
Installation of Supervisor component

Log into Sage X3, switch to the X3 endpoint

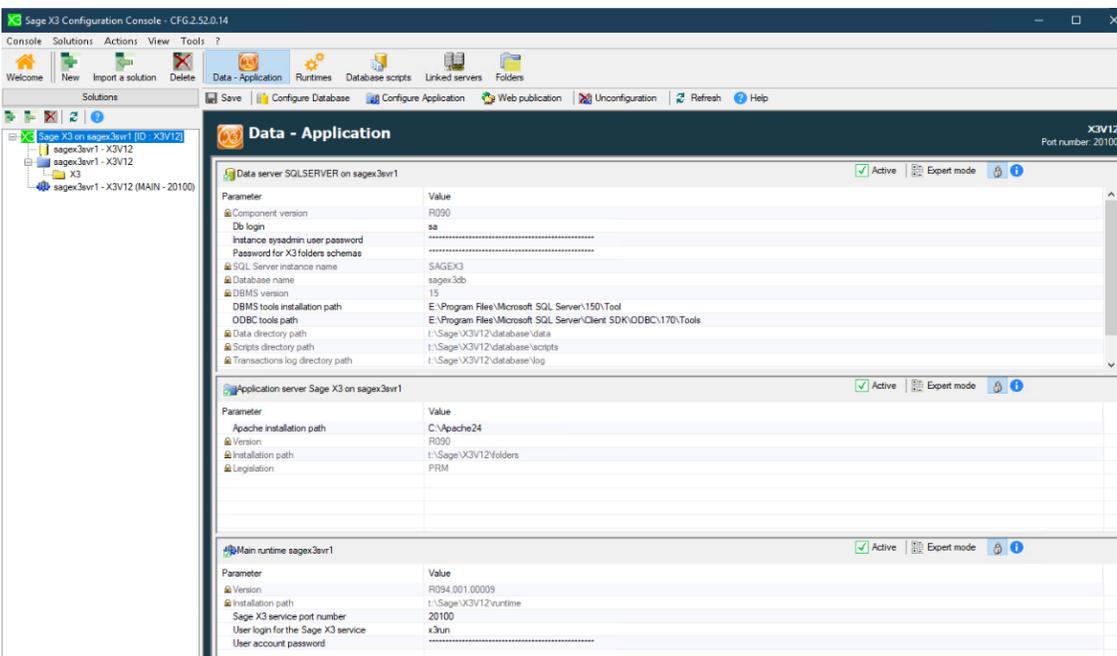
And navigate to Parameters, Users, Users

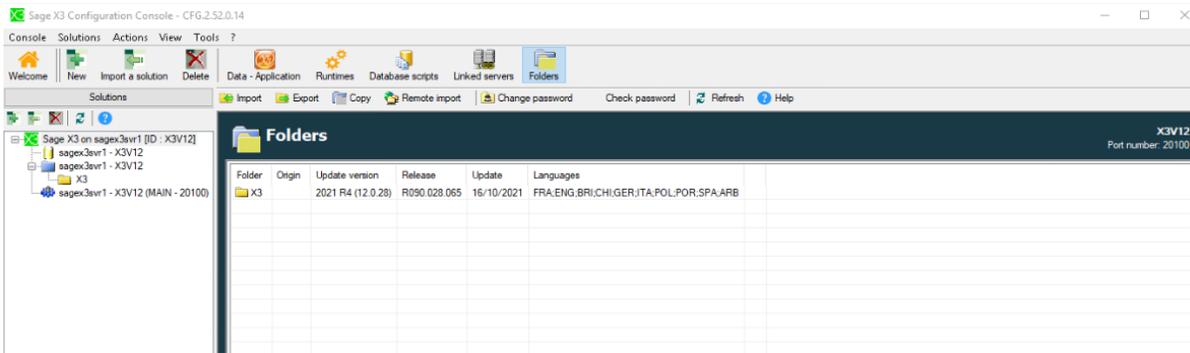


Press ok on the next message to install the supervisor component



Once installation completed, we can open the Sage X3 management console & the X3 folder is now visible.





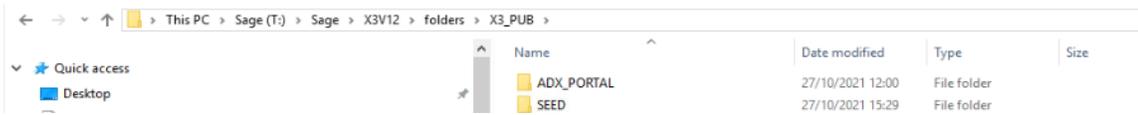
Import SEED Folder

Download SEED distribution for V12 P28 and mount the iso file "C:\Users\x3admin\software\x3-seed-12.0.28.iso"

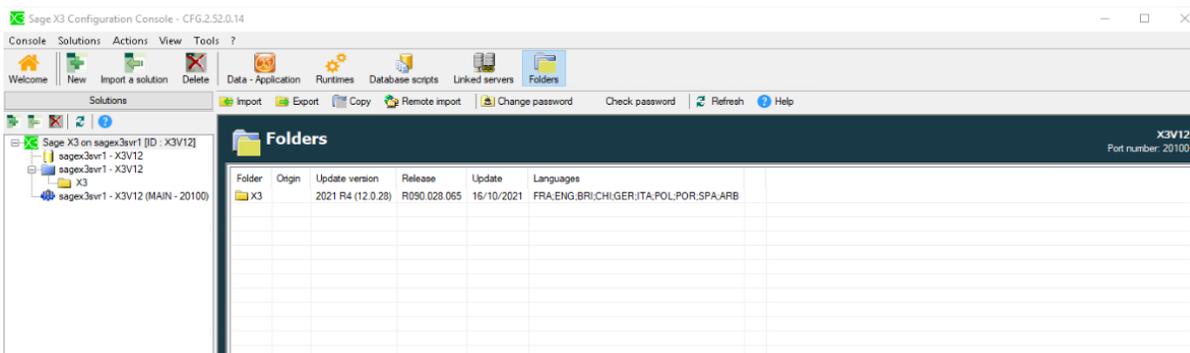
Extract x3-seed-12.0.28.zip to the folders location and X3_PUB location



And



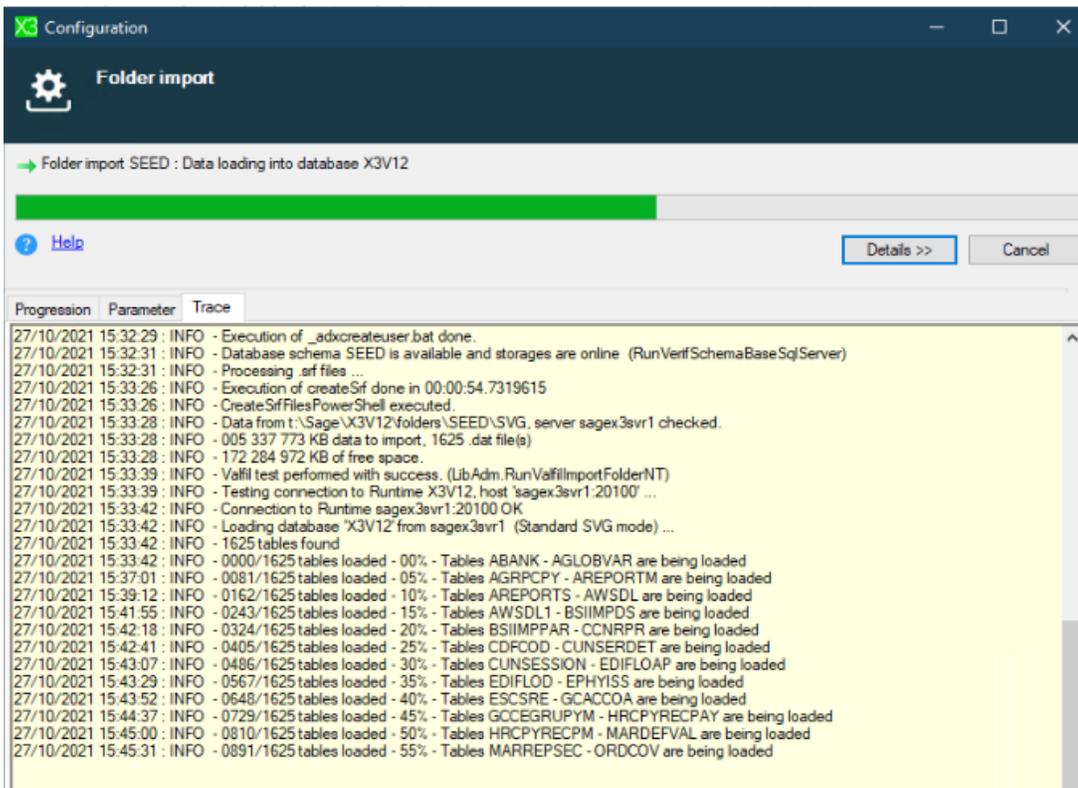
Navigate to folders in the Management console and select import



Press OK

Progression	Parameter	Trace	Status
→	Folder import SEED : Folder scripts generation		Running
	Folder import SEED : Database user creation		On hold
	Folder import SEED : Srf files generation		On hold
	Folder import SEED : Data loading into database X3V12		On hold
	Folder import SEED : Folder definition generation		On hold

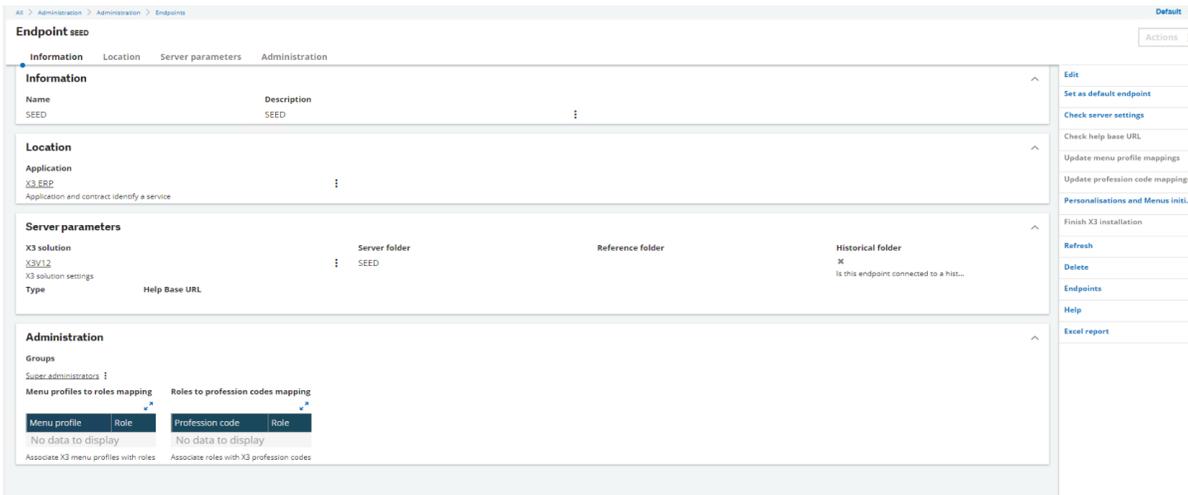
Monitor process on the trace tab



Once import is complete, we can see the folder details

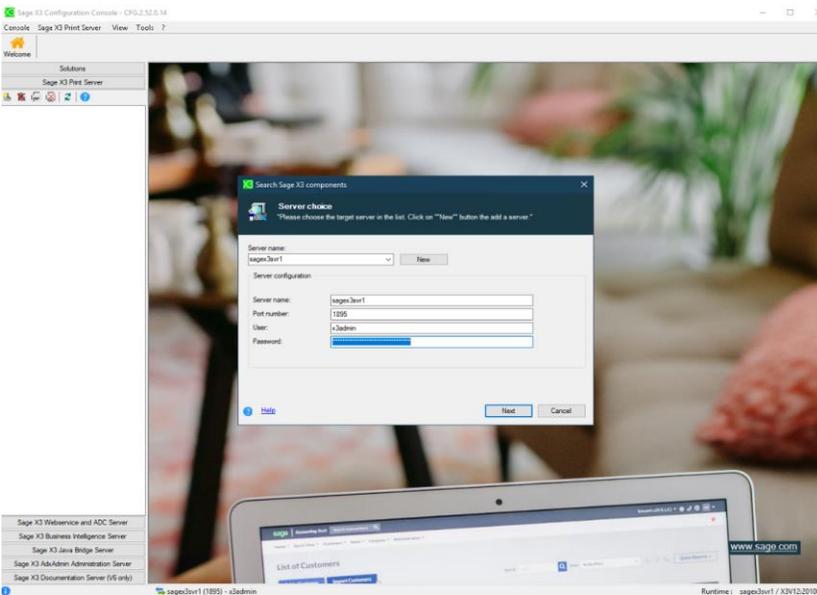


Create SEED Endpoint in Syracuse



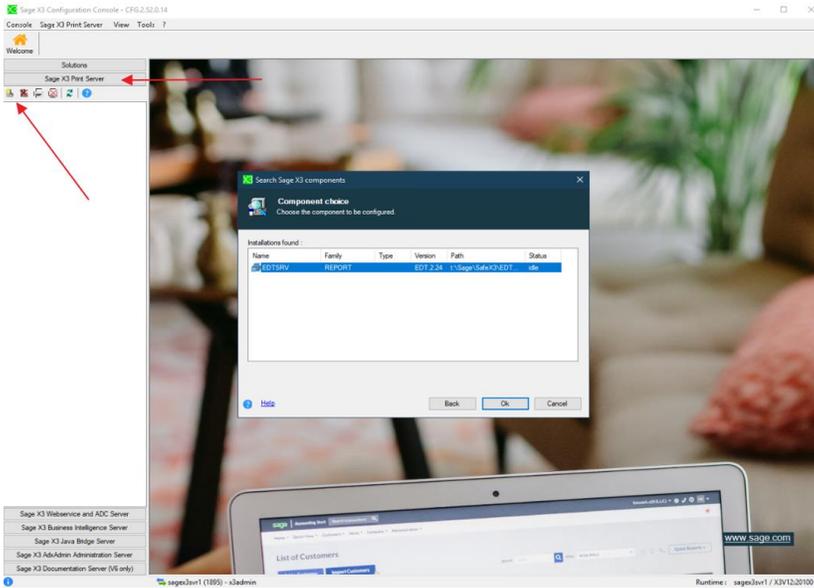
Configure Print server

Login to the Sage X3 management console



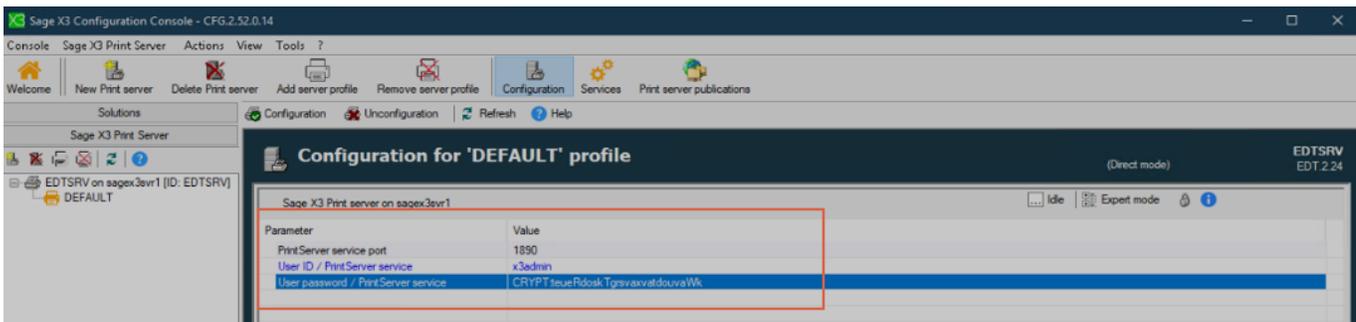
Click print server section in the left menu

Click the add icon to add new print server to the solution

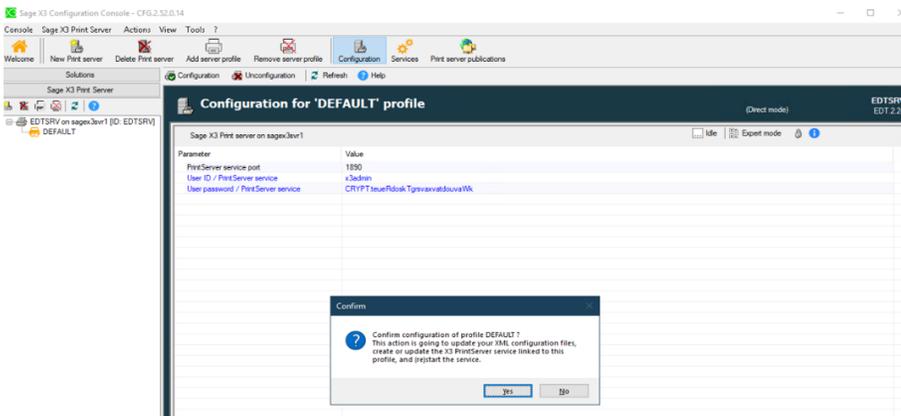


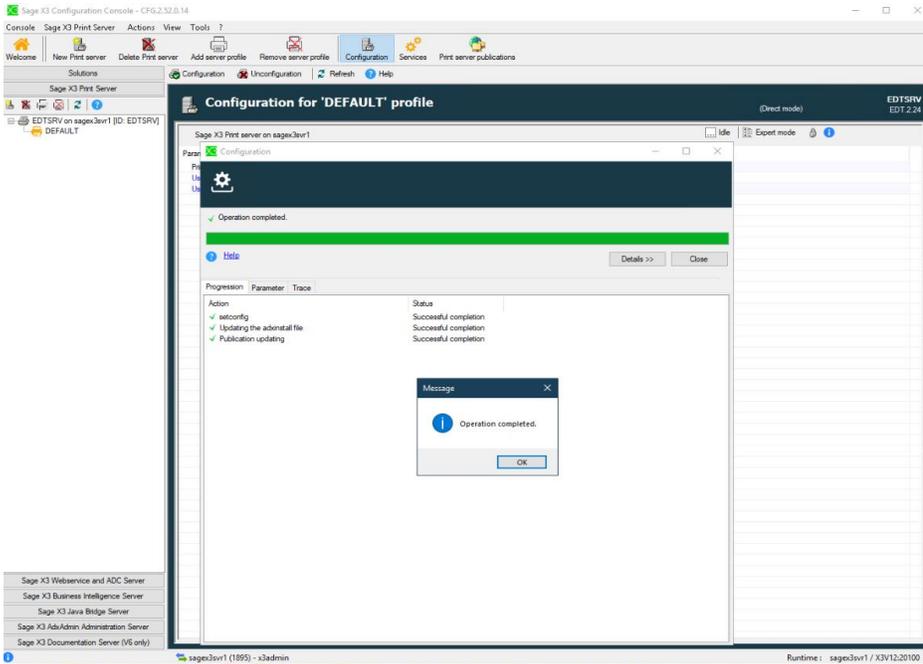
Press configuration

Populate the print server parameters (port user & password)

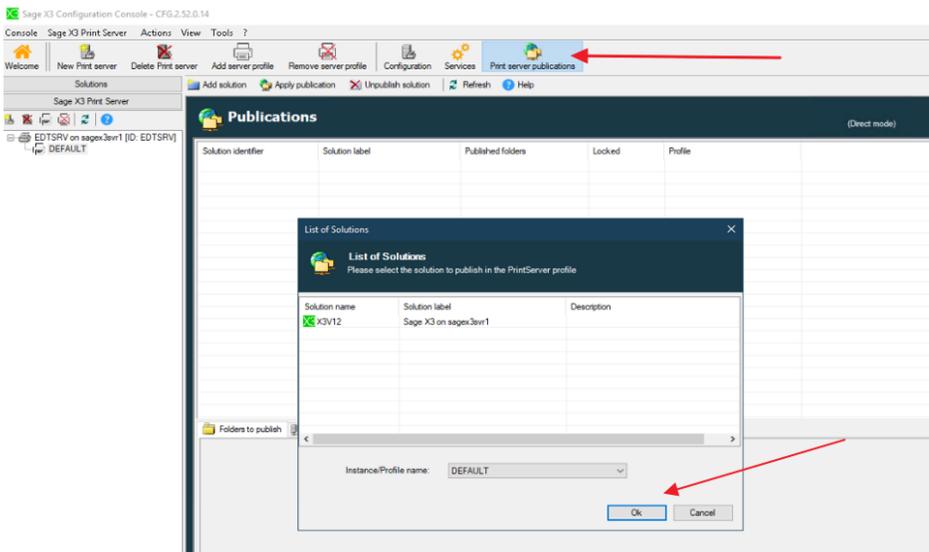


Press configuration and 'Yes' on the next menu

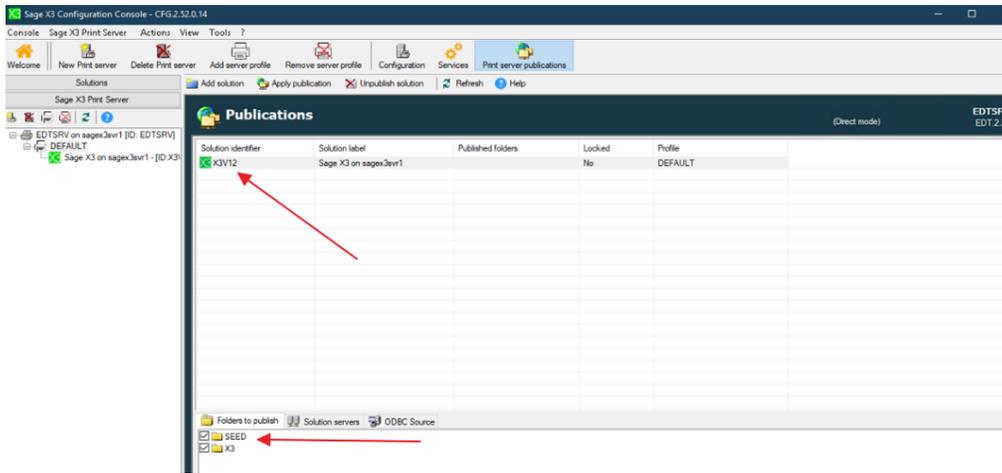




Configuration is complete we add the solution by selecting print server publication



Select the publication and add publish the folders



Conclusion

This “Build diary” provides an outline of installing Sage X3 components on a single server.