



Test system Build Diary

2022 R4 (V12 patch 32) “Big Build” Part 1 - 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 installing a multi-node 2022 R4 instance.

2022 R4 – Multi-Node installation build diary

Objective

I want to create a new installation with multiple VMs to allow for configuration of a MongoDB cluster, Syracuse cluster and Application Cluster.

Starting architecture and notes

Six Windows Server 2022 servers (Server names mzAD, mzDB, mzPRINT, mzWEB1, mzWEB2, mzWEB3)

Software already loaded:

Windows Server 2022

OpenJDK 1.8.0_282

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 2022 R4)

mzWEB1

- Syracuse
- MongoDB
- X3 Runtime
- AdxAdmin

mzWEB2

- Syracuse
- MongoDB
- X3 Runtime
- AdxAdmin

mzWEB3

- Syracuse
- MongoDB
- X3 Runtime
- AdxAdmin

mzPRINT

- Elastic Search
- Print Server
- AdxAdmin

mzAD

- MS AD
- Apache Load Balancer
- X3 Console

mzDB

- SQL Server Database

[Firewall setup](#)

All servers are in the same MS AD domain. Firewall rules between these servers allow all traffic. Only external traffic needs to be added to the firewall rules, which should only be port 443 into the MZAD server (see notes later in this document).

Documentation to use for planning and execution of this task

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

Application cluster: <https://online-help.sageerp3.com/erp/12/wp-static-content/public/Application%20Cluster%20Architecture/Default.htm>

Which firewall ports need to be open in a multi-node environment

<https://support.na.sage.com/selfservice/viewdocument.do?externalId=102936>

“SSL certificates on Syracuse & MongoDB” presentation available from “Index page: Sage X3 Technical Support Tips and Tricks (September 2021)”

<https://www.sagecity.com/gb/sage-x3-uk/b/sage-x3-uk-support-insights/posts/index-page-sage-x3-technical-support-tips-and-tricks-september-2021>

How do I disable the Internal Load Balancer for Syracuse?

<https://support.na.sage.com/selfservice/viewdocument.do?externalId=108166>

MongoDB

<https://docs.mongodb.com/v4.4/replication/>

<https://docs.mongodb.com/v4.4/administration/replica-set-deployment/>

<https://docs.mongodb.com/v4.4/tutorial/convert-standalone-to-replica-set/index.html>

SQL Server installation

https://online-help.sageerp3.com/erp/12/public/prerequisites_windows-sql-server.html

SQL Server 2019 installation

Copy the ISO image locally, then mount
 “en_sql_server_2019_enterprise_x64_dvd_5e1ecc6b.iso”
 Run “setup.exe”

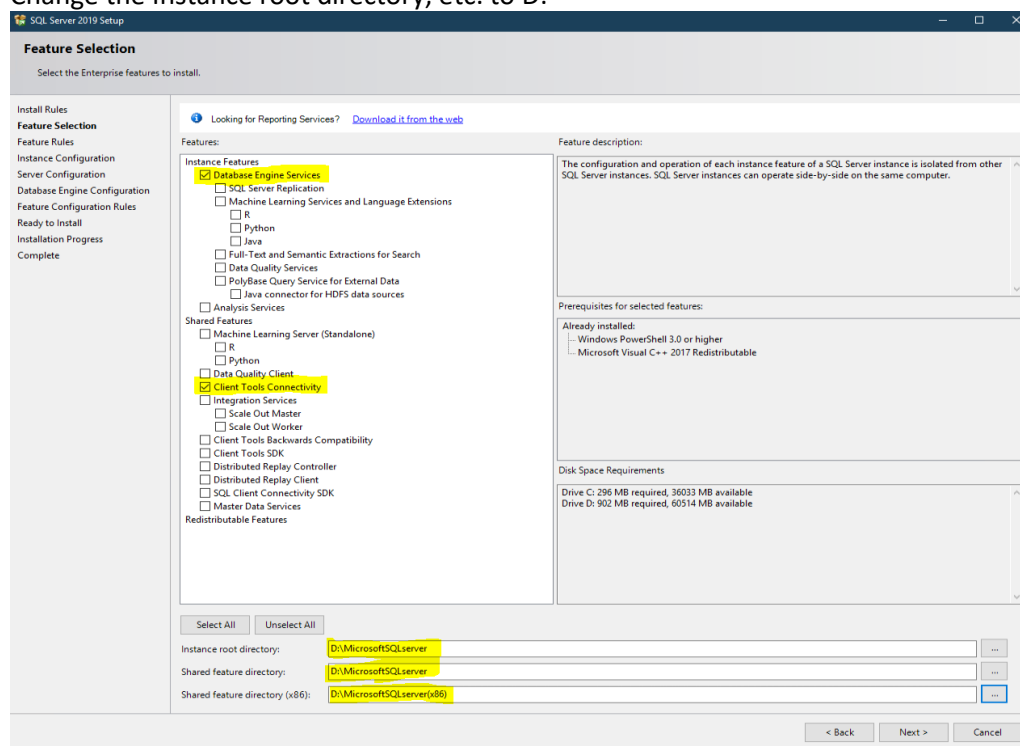
Select “Installation” then “New SQL Server stand-alone installation”

Selected features:

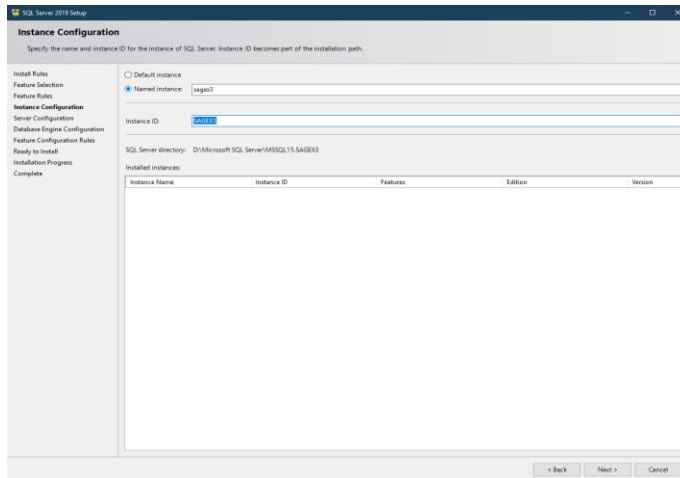
Database Engine Services

Client Tools connectivity

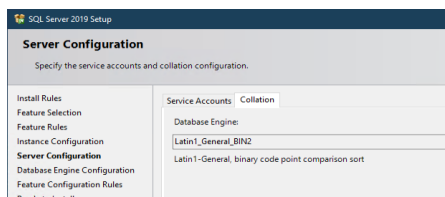
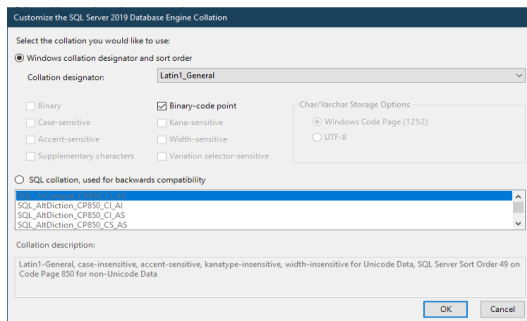
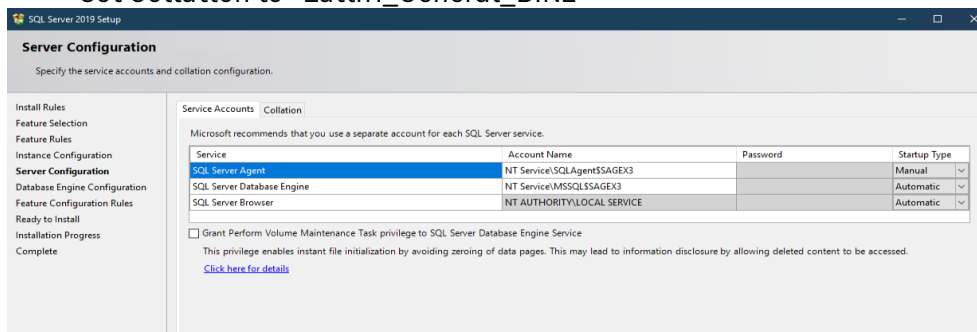
Change the Instance root directory, etc. to D:



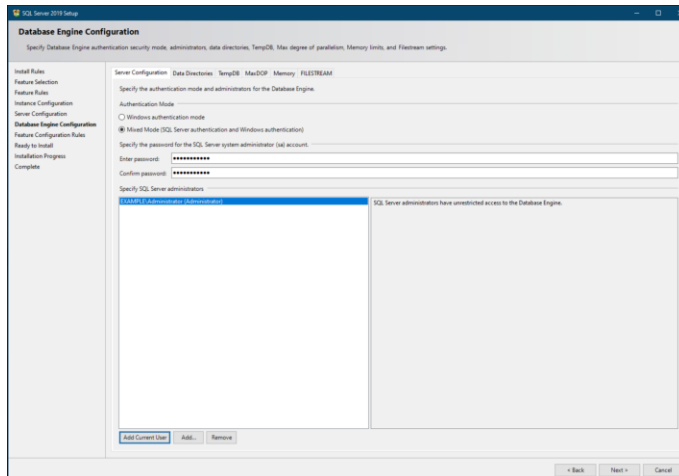
Named instance: sage3



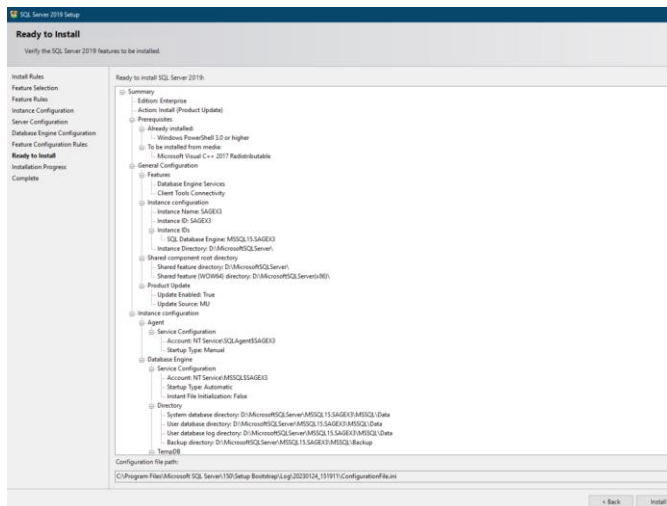
Set Collation to “Latin1_General_BIN2”



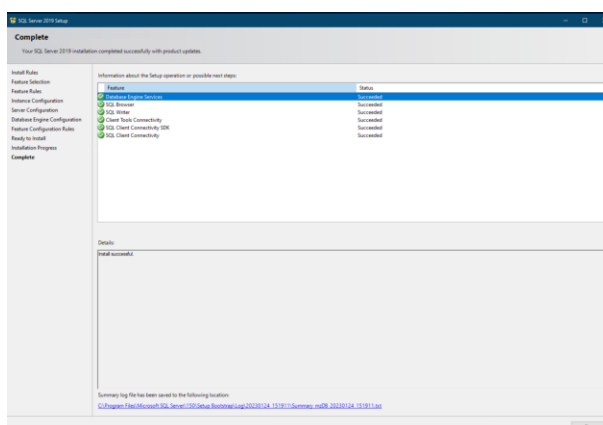
Set “mixed mode”
Add current user
Set “sa” password



Left Data Directories, TempDB, MaxDOP, Memory and FILESTREAM as default.

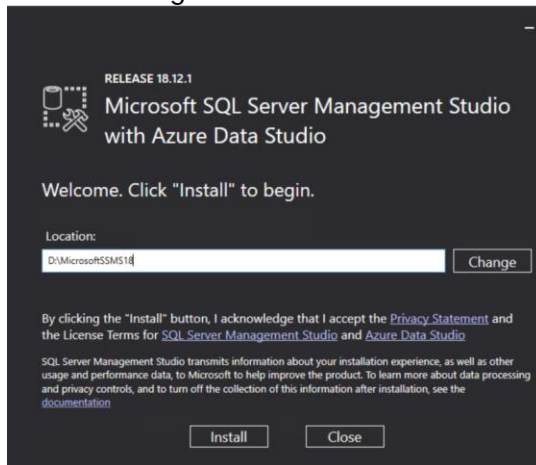


Click "Install"



Install SQL Server Management tools (18.12.1)
 Z:\Software\SSMS\SSMS-Setup-ENU_18.12.1.exe

Change location to D:



Restart server when prompted

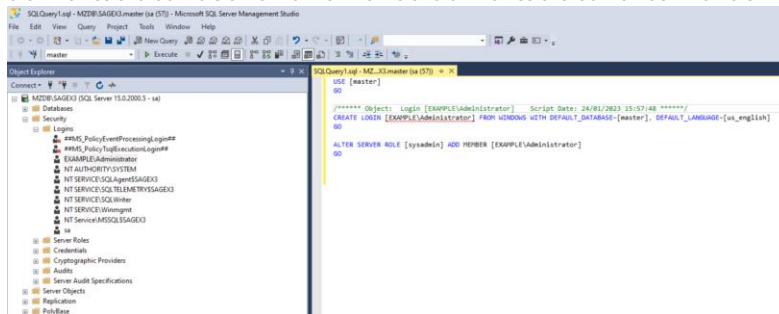
Test can connect to the database using SSMS

MZDB\SAGEX3

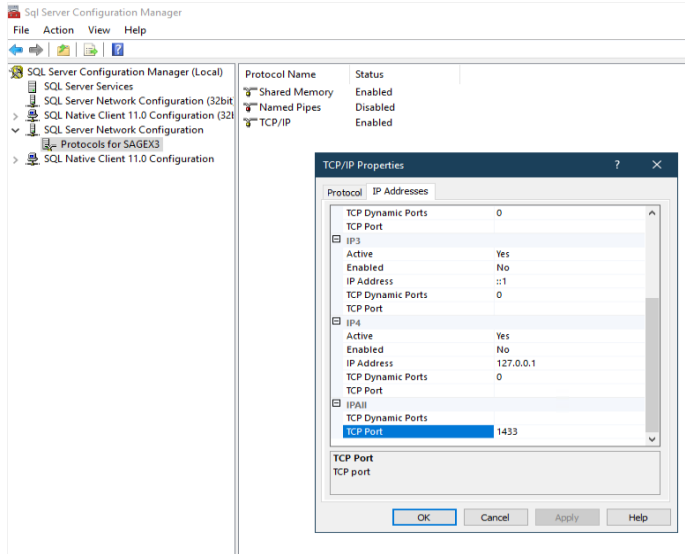
Windows Authentication and “sa” user

Pin SSMS to taskbar

I added current user rather than “sagex3” user, so manually created new login from the administrator user and removed administrator afterwards



Setup SQL Server to listen on specific port for TCP/IP



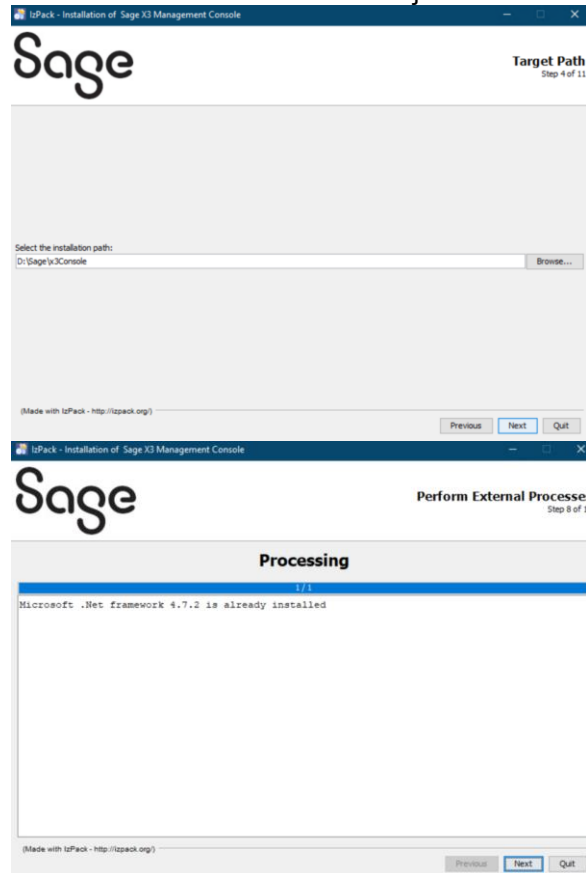
Set Agent, CEIP and VSS services to disabled (I don't need them)
Restart other SQL Server services and test can still connect via SSMS

Sage X3 installation steps

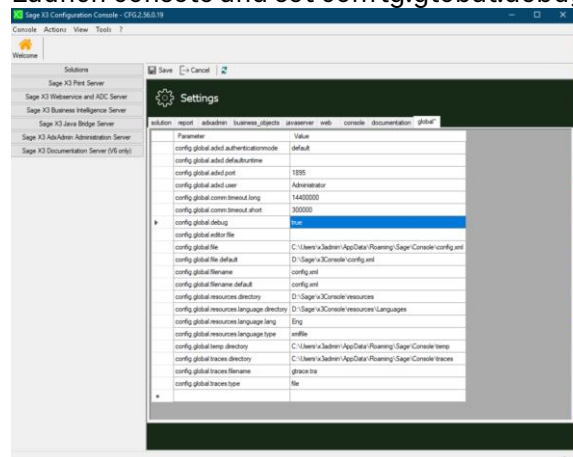
Install X3 Console (mzAD server)

https://online-help.sageerp3.com/erp/12/public/prerequisites_console.html

Launch “console-2.56.0.19-win.jar“ from directory “D:\Software\Sage\ISO\X3Installs\Console”



Launch console and set `config.global.debug = True`



Install(mzPRINT)

Refer to "Additional notes when upgrading ElasticSearch" (

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

Extract "elasticsearchMZPRINT-7.16.3-windows-x86_64.zip" into D:\

Run "InstallElastic.cmd" script using "Run as administrator"

```

1  REM Set the following variables to suit your environment
2  set "mzNewServiceName=ElasticSearch_7.16.3"
3  set "ES_HOME=D:\ElasticSearch-7.16.3"
4  set "JAVA_HOME=%ES_HOME%\jdk"
5  REM The following lines should not need to be changed
6  cd /d "%ES_HOME%\bin"
7  set "ES_PATH_CONF=%ES_HOME%\config"
8  set "ES_START_TYPE=auto"
9  set "SERVICE_ID=%mzNewServiceName%"
10 set "SERVICE_DISPLAY_NAME=%mzNewServiceName%"
11 set "SERVICE_DESCRIPTION=%mzNewServiceName%"
12 elasticsearch-service.bat install
13 pause

```

Edit "elasticsearch.yml"

```

22 #
23 node.name: node-1
24 #
25 # Add custom attributes to the node:
26 #
27 #node.attr.rack: r1
28 #
29 # ----- Paths -----
30 #
31 # Path to directory where to store the data (separate multiple locations by comma):
32 #
33 #path.data: /path/to/data
34 #
35 # Path to log files:
36 #
37 #path.logs: /path/to/logs
38 #
39 # ----- Memory -----
40 #
41 # Lock the memory on startup:
42 #
43 #bootstrap.memory_lock: true
44 #
45 # Make sure that the heap size is set to about half the memory available
46 # on the system and that the owner of the process is allowed to use this
47 # limit.
48 #
49 # Elasticsearch performs poorly when the system is swapping the memory.
50 #
51 # ----- Network -----
52 #
53 # By default Elasticsearch is only accessible on localhost. Set a different
54 # address here to expose this node on the network:
55 #
56 network.host: 0.0.0.0
57 #
58 # By default Elasticsearch listens for HTTP traffic on the first free port it
59 # finds starting at 9200. Set a specific HTTP port here:
60 #
61 #http.port: 9200
62 #
63 # For more information, consult the network module documentation.
64 #
65 # ----- Discovery -----
66 #
67 # Pass an initial list of hosts to perform discovery when this node is started:
68 # The default list of hosts is ["127.0.0.1", "::1"]
69 #
70 discovery.seed_hosts: ["mzPRINT"]
71 #
72 # Bootstrap the cluster using an initial set of master-eligible nodes:
73 #
74 cluster.initial_master_nodes: ["node-1"]
75 #
76 # For more information, consult the discovery and cluster formation module documentation.
77 #

```

NOTE: I am opening up the network.host to all traffic for now

Test URL <http://mzprint:9200/> from mzPRINT server first, then from mzWEB1 as well

```

{
  "name": "MZPRINT",
  "cluster_name": "elasticsearch",
  "cluster_uid": "_na_",
  "version": {
    "number": "7.16.3",
    "build_flavor": "default",
    "build_type": "zip",
    "build_hash": "4e6e4eab2297e949ec994e688dad46290d018022",
    "build_date": "2022-01-06T23:43:02.825887787Z",
    "build_snapshot": false,
    "lucene_version": "8.10.1",
    "minimum_wire_compatibility_version": "6.8.0",
    "minimum_index_compatibility_version": "6.0.0-beta1"
  },
  "tagline": "You Know, for Search"
}

```

Install Application Cluster (mzWIN1, mzWIN2, mzWIN3)

Online help (

<https://online-help.sageerpx3.com/erp/12/wp-static-content/public/Application%20Cluster%20Architecture/Content/How-to%20guides/Platform/Application%20cluster%20architecture/Topic%201%20Application%20cluster%20architecture.htm>)

Additional notes when installing Application Cluster (

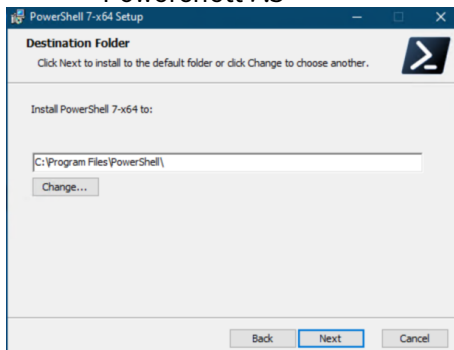
<https://support.na.sage.com/selfservice/viewdocument.do?externalId=109651>)

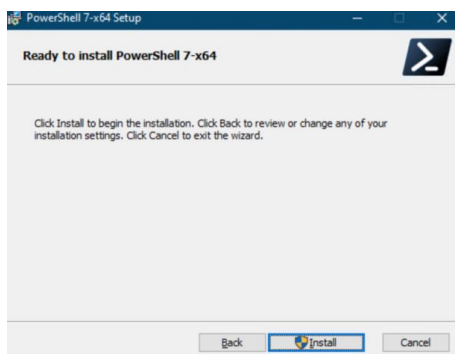
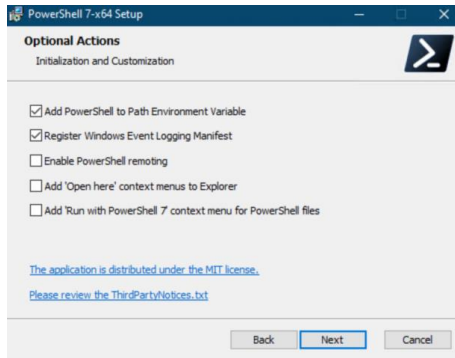
Prerequisites

- A. The runtime servers have a pre-req of Powershell 7.2 or later (64-bit)

Review <https://learn.microsoft.com/en-us/powershell/scripting/install/installing-powershell-on-windows?view=powershell-7.2#msi> Version 7.3.1 is the latest and is already downloaded.

1. First execute “D:\Microsoft\PowerShell_v7\PowerShell-7.3.1-win-x64.msi” to install Powershell 7.3





2. As I am using SQL server, I then need to follow the steps in “PowerShell for Microsoft SQL Server architectures”
 - Open an MS-DOS command prompt with administrator rights.
 - Run “Pwsh.exe” to launch PowerShell.
 - Enter \$PSVersionTable to check that you are in version 7.2 or higher.

```

Administrator: Command Prompt - pwsh
Microsoft Windows [Version 10.0.20348.1487]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\system32>pwsh
PowerShell 7.3.1
PS C:\Windows\System32> $PSVersionTable

Name                Value
----                -
PSVersion           7.3.1
PSEdition            Core
BuildCommitId       7.3.1
OS                  Microsoft Windows 10.0.20348
Platform            Win32NT
PSCompatibleVersions {1.0, 2.0, 3.0, 4.0...}
PSRemotingProtocolVersion 2.3
SerializationVersion 1.1.0.1
CLRStackVersion     3.0
PS C:\Windows\System32>
  
```

- Run the command "Install-Module -Name SqlServer -Scope AllUsers -force" to install the Microsoft SQL Server PowerShell module.

```
PS C:\Windows\System32> Install-Module -Name SqlServer -Scope AllUsers -force
Installing package 'SqlServer' [Copying unzipped package to 'C:\Users\x3admin.EXAMPLE\AppData\Local\Temp\392973800\S. ]
```

- Run the command "Get-InstalledModule -Name SqlServer" to make sure that the installation went well.

```
PS C:\Windows\System32> Install-Module -Name SqlServer -Scope AllUsers -force
PS C:\Windows\System32> Get-InstalledModule -Name SqlServer

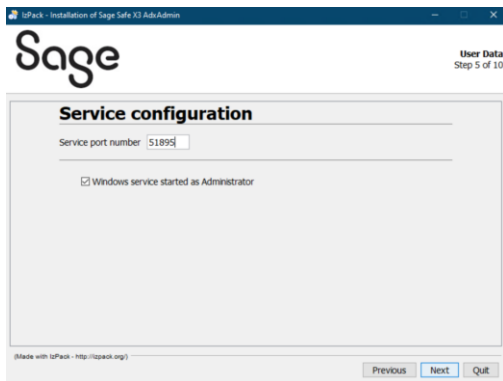
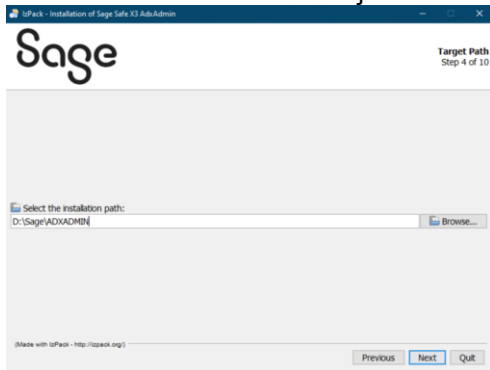
Version      Name      Repository      Description
-----
21.1.18256   SqlServer PSGallery       This module allows SQL Server developers, administrators and business intelligence professionals to aut...
```

B. The runtime servers also have a pre-req of (64-bit) Microsoft Command Line Utilities 15 for SQL Server and Microsoft ODBC Driver 17 for SQL Server as described in https://online-help.sageerp3.com/erp/12/public/prerequisites_windows-sql-server.html

- Run “MsSqlCmdLnUtils_15.0.2.msi” to install Command Line Tools
- Run “msodbcsql_17.10.2.1.msi” to install ODBC driver
- Restart Windows Server

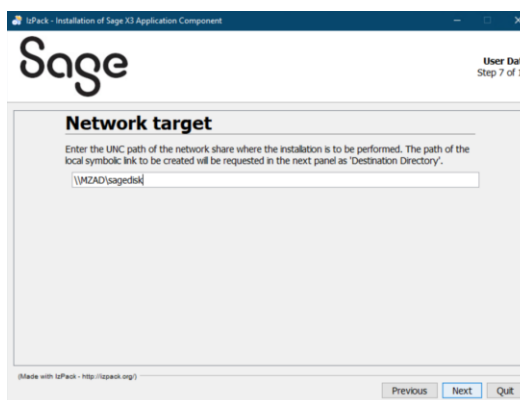
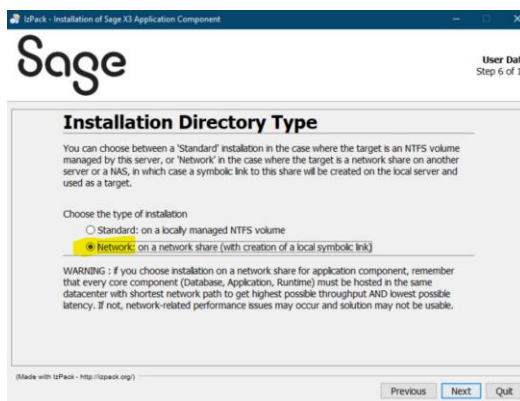
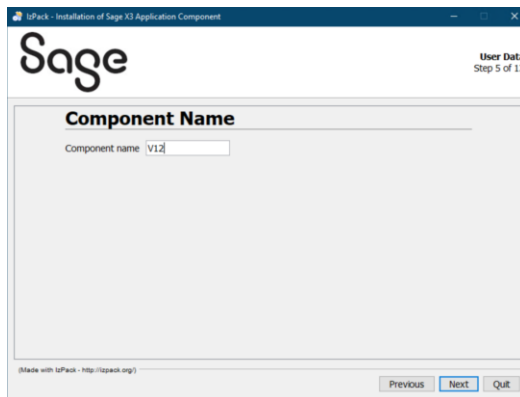
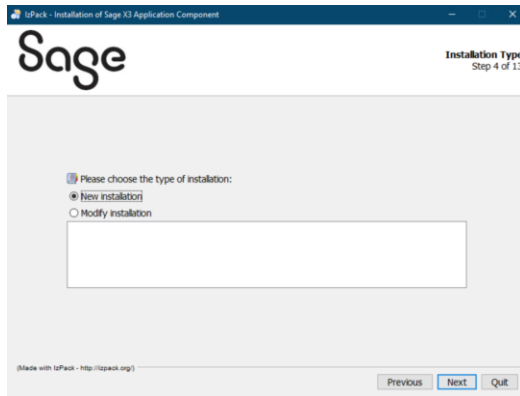
Install AdxAdmin

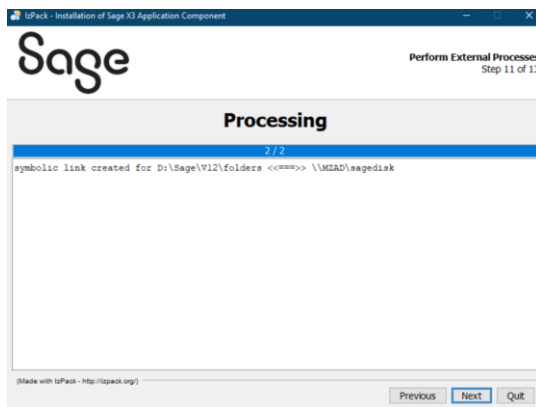
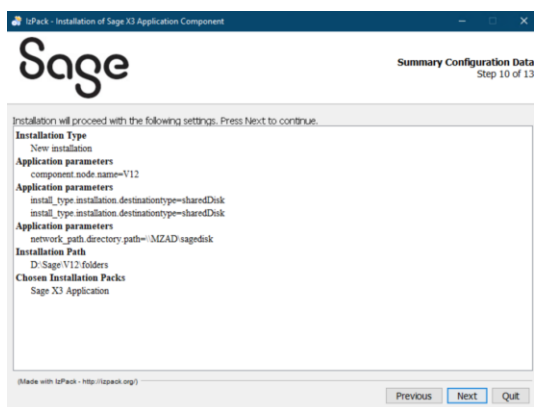
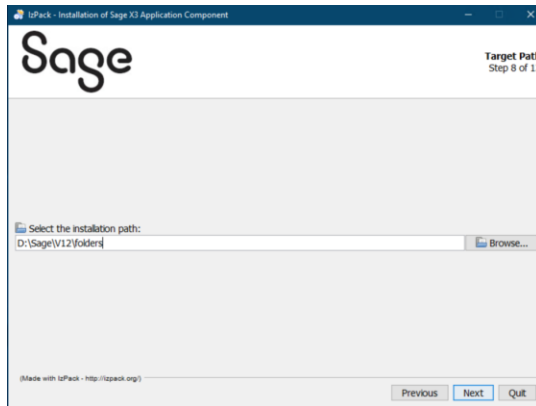
Launch “adxadmin-95.2.85.jar” from directory “D:\Software\Sage\ISO\X3Installs\AdxAdmin”



Install Application (mzWEB1 only)

Launch “x3-application-12.0.32.jar” from directory “D:\Software\Sage\ISO\X3Installs\Application”

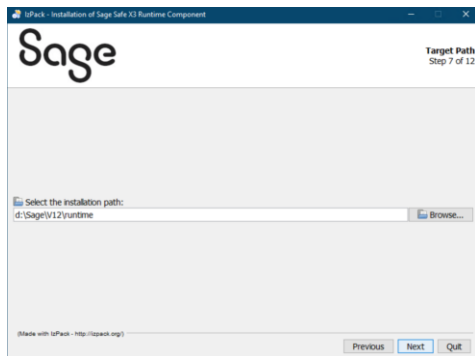
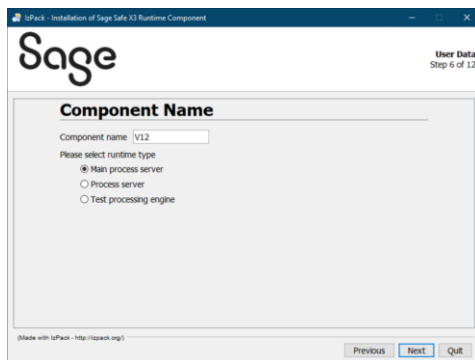
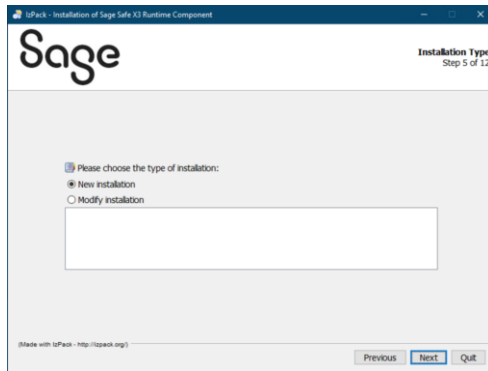




Takes around 20 minutes to complete

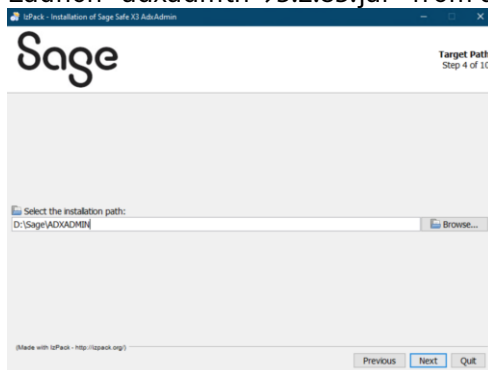
[Install Runtime \(mzWIN1, mzWIN2, mzWIN3\)](#)

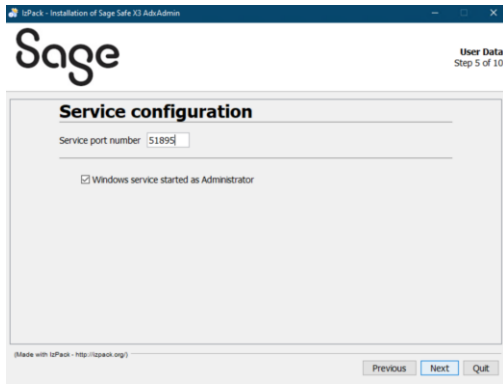
Launch “runtime-95.2.85.jar” from directory “D:\Software\Sage\ISO\X3Installs\Runtime”



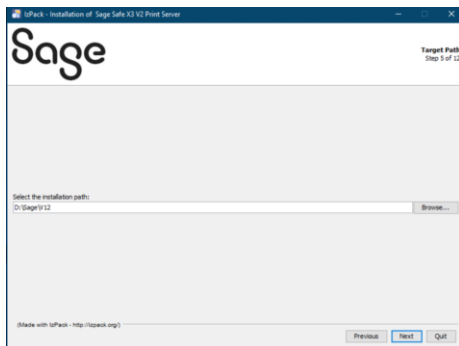
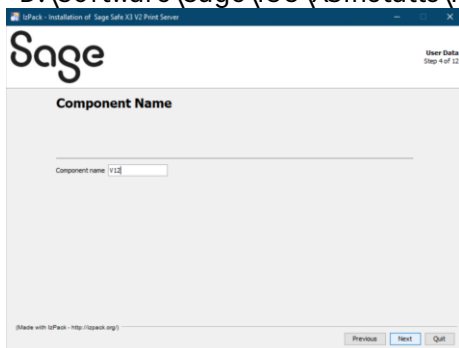
Install Print Server (mzPRINT)

Launch “adxadmin-95.2.85.jar” from directory “D:\Software\Sage\ISO\X3Installs\AdxAdmin”





Launch “print-server-2.27.0.3-win.jar” from directory “D:\Software\Sage\ISO\X3Installs\PrintServer”

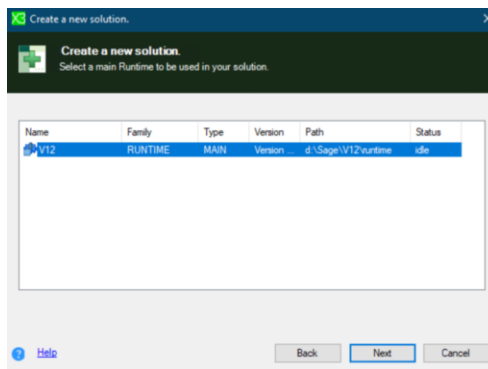
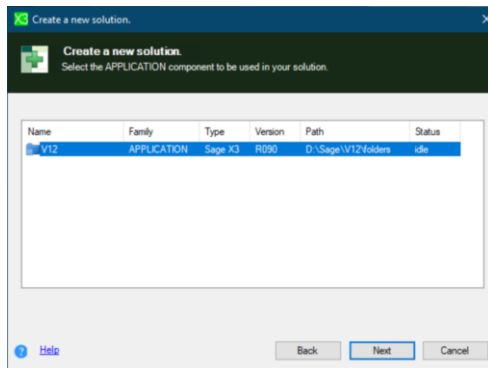
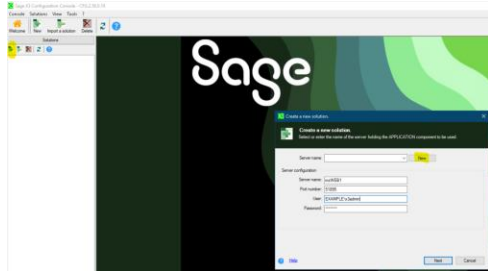


Classic Components configuration (mzAD)

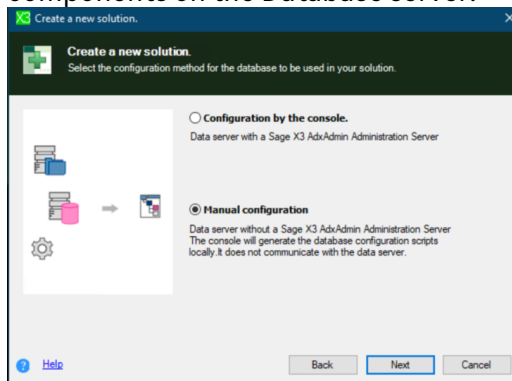
https://online-help.sageerp3.com/erp/12/public/configuration-console_console.html

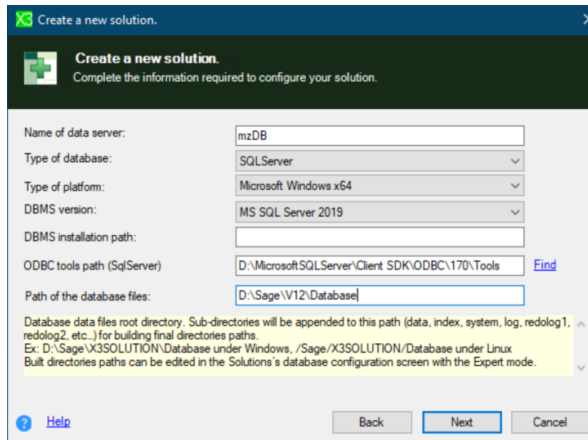
Launch X3 Console

Add new solution for server name mzWEB1

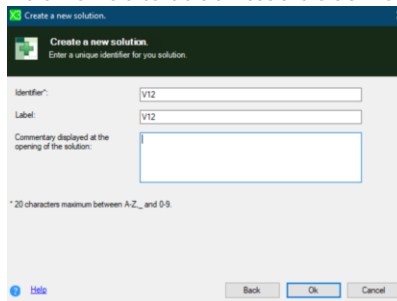


I am doing a Manual configuration of the database, as do not want to install any Sage components on the Database server.





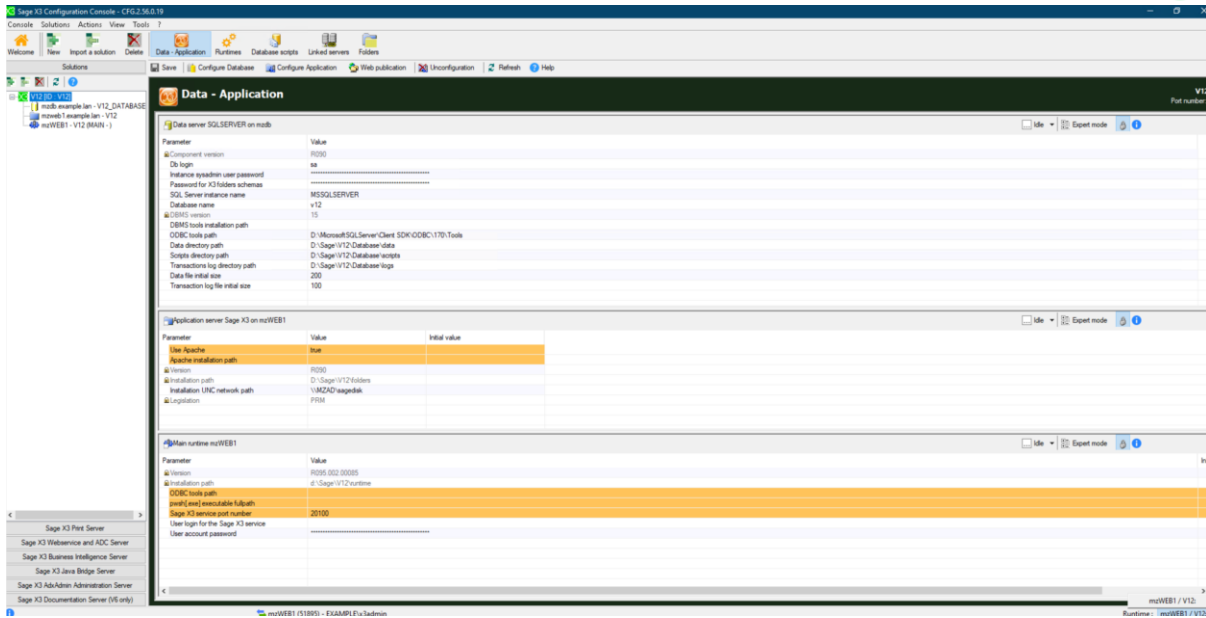
DBMS installation path is optional (according to the tooltip)
 ODBC tools path already exists on the DB server (where SQLCMD.exe lives in binn directory)
 Path of database files does not exist yet, but is suggested/standard location



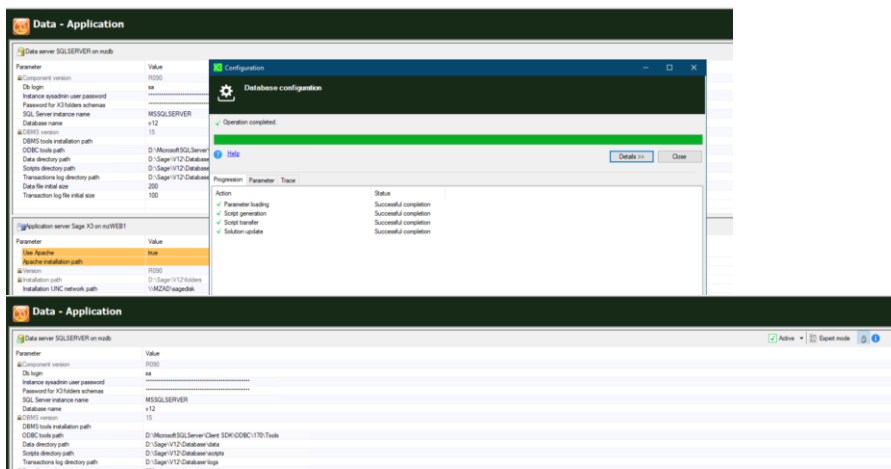
Set the parameters:

- Instance sysadmin user password (i.e. the “sa” user password)
- Password for X3 folders schema
- SQL server instance name = SAGEX3

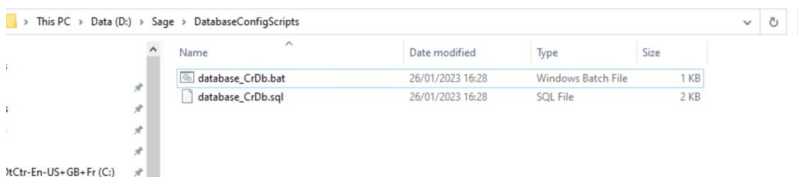
Click “Save” on the console



Click “Configure Database”
Create and enter new directory location to store the scripts “D:\Sage\DatabaseConfigScripts”



Although the database is showing as “Active” the scripts now need to be manually copied over and run on the database



On the database server, create directories:

```
D:\Sage\V12\Database\data
D:\Sage\V12\Database\logs
D:\Sage\V12\Database\scripts
D:\Sage\V12\Database\traces
```

Drop the scripts into the D:\Sage\V12\Database\scripts directory, then execute “database_CrDb.bat”

```

1  --
2  -- Please, use the F5 key to launch this script
3  --
4  -- Connection to the system database (master)
5  USE master
6  GO
7  -- Check collation for 'master' and 'tempdb' databases
8
9
10
11 declare @masterCollation nvarchar (50)
12 declare @tempdbCollation nvarchar (50)
13 select @masterCollation=collation_name FROM sys.databases where name='master'
14 select @tempdbCollation=collation_name FROM sys.databases where name='tempdb'
15
16 if UPPER(@masterCollation)<>UPPER('Latin1_general_CI_AS') or UPPER(@tempdbCollation)<>UPPER('Latin1_general_CI_AS')
17 BEGIN
18     print 'NO-Collations for master and tempdb databases are not compliant with Sage X3 recommendations.'
19     print 'This won't prevent Sage X3 to work, but will result in lower performance during operation.'
20 END
21
22
23 -- Create Sage X3 database: v12
24
25 CREATE DATABASE [v12]
26 ON
27     ( NAME = [v12_data],
28       FILENAME = 'D:\Sage\V12\Database\data\v12_data.mdf',
29       SIZE = 100,
30       MAXSIZE = UNLIMITED,
31       FILEGROWTH = 16 )
32     LOG ON
33     ( NAME = [v12_log],
34       FILENAME = 'D:\Sage\V12\Database\logs\v12_log.ldf',
35       SIZE = 100,
36       MAXSIZE = UNLIMITED,
37       FILEGROWTH = 1 )
38     COLLATE Latin1_general_CI_AS
39 GO
40
41 alter database [v12] set read_committed_snapshot on
42
43
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```

My script was failing to run as I forgot to enter the “SQL server instance name” in the X3 Console. Should have put in, as below...

Parameter	Value
Component version	R030
Db login	sa
Instance sybsrvr user password	
Password for X3 folders schemas	
SQL Server instance name	SAGEX3
Database name	v12
DBMS version	15
DBMS installation path	D:\Microsoft SQL Server\15\Tools\Binn\SQLCMD.exe
ODBC tools path	D:\Microsoft SQL Server\15\Tools\Binn\SQLCMD.exe
Data directory path	D:\Sage\V12\Database\data
Scripts directory path	D:\Sage\V12\Database/scripts
Transactions log directory path	D:\Sage\V12\Database/logs
Data file initial size	200
Transaction log file initial size	100

I just had to change the script manually for it to run OK

```

1
2  @echo off
3  chcp 65001>nul
4
5  if exist D:\Sage\V12\Database\scripts\database_CrDb.end del D:\Sage\V12\Database\scripts\database_CrDb.end
6
7
8  "D:\MicrosoftSQLServer\Client SDK\ODBC\170\Tools\Binn\sqlcmd.exe" -S "mzdb\SAGEX3" -U sa -d master -i
9  D:\Sage\V12\Database\scripts\database_CrDb.sql -o D:\Sage\V12\Database\traces\database_CrDb.log -P "Password123"
10
11 Echo database_CrDb.bat > D:\Sage\V12\Database\scripts\database_CrDb.end
12
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99
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```

Configure Application and Runtimes

In the Application Server section

Set Use Apache = False (No)

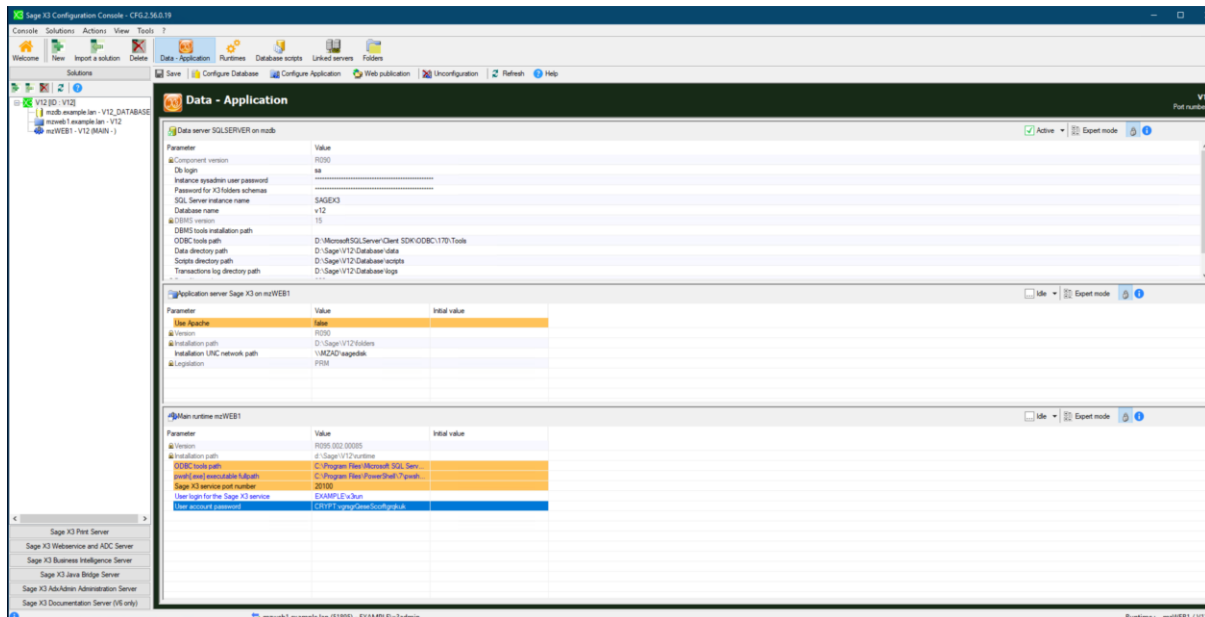
In the Main Runtime section

ODBC tools path = C:\Program Files\Microsoft SQL Server\Client SDK\ODBC\170\Tools
(Wasn't in the drop-down list, caused by not restarting Windows Server after installing the tools!)

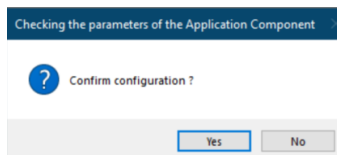
Pwsh[.exe] executable fullpath = C:\Program Files\PowerShell\7\pwsh.exe (From drop-down list)

User login for the SAFE X3 service = EXAMPLE\x3run

User account password



Click “Save” then “Configure Application”



Takes about 15 mins to complete

Configuration

Configuring the application

✓ Operation completed.

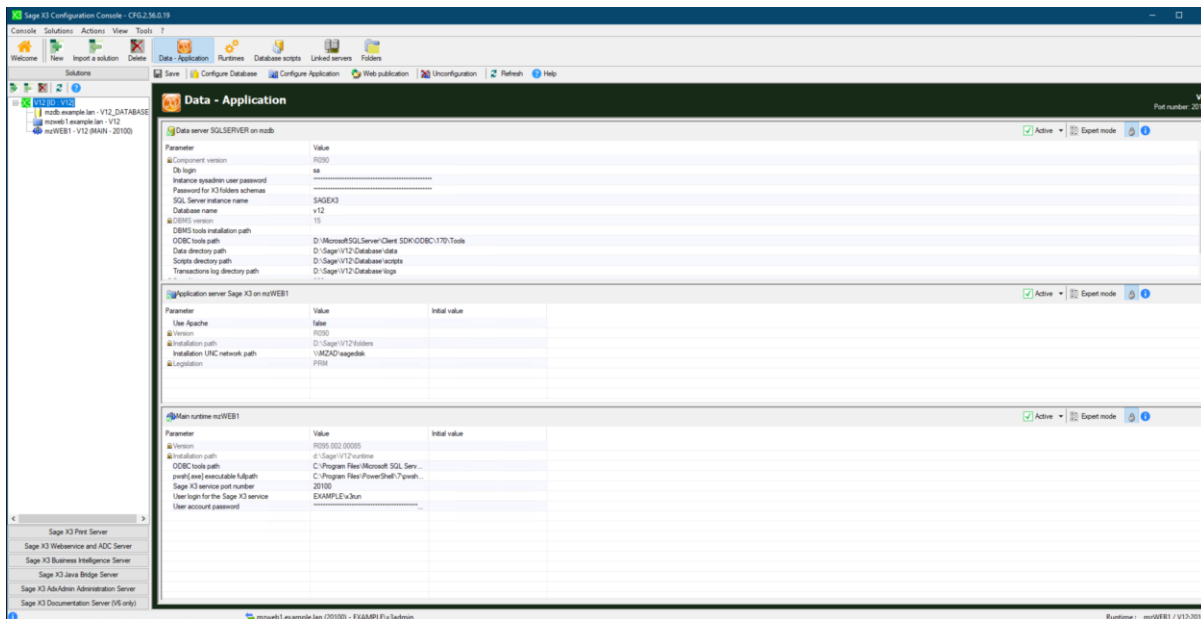
[Help](#)

Progression	Parameter	Trace
Action		Status
✓ Main runtime configuration		Successful completion
✓ Application scripts generation		Successful completion
✓ Application scripts transfer		Successful completion
✓ Database admin user creation		Successful completion
✓ Data loading into database v12		Successful completion

Progression	Parameter	Trace
30/01/2023 16:04:28		INFO -
30/01/2023 16:04:28		INFO -
30/01/2023 16:04:28		INFO - Sage Application setup 30/01/2023 16:04:28
30/01/2023 16:04:28		INFO -
30/01/2023 16:04:28		INFO - Starting application configuration
30/01/2023 16:04:28		INFO -
30/01/2023 16:04:28		INFO - "-- Sage Application setup --"
30/01/2023 16:04:28		INFO - Application : reading adxinstalls on mzWEB1...
30/01/2023 16:04:28		INFO - Information from adxinstalls.xml on application server retrieved.
30/01/2023 16:04:28		INFO - Ok
30/01/2023 16:04:28		INFO - Database : reading adxinstalls on mzdb ...
30/01/2023 16:04:28		INFO - Information from adxinstalls.xml on data server retrieved.
30/01/2023 16:04:28		INFO - Ok
30/01/2023 16:04:28		INFO - Information from adxinstalls.xml retrieved.
30/01/2023 16:04:28		INFO - Ok
30/01/2023 16:04:28		INFO - Main runtime : reading adxinstalls on mzWEB1...
30/01/2023 16:04:28		INFO - Information from adxinstalls.xml on main runtime server retrieved.
30/01/2023 16:04:28		INFO - Ok
30/01/2023 16:04:28		INFO - Starting configuration from Runtime V12 (R090), mzWEB1, WIN32
30/01/2023 16:04:28		INFO - Launching preparation runtime configuration ...
30/01/2023 16:04:52		INFO - Launching main runtime configuration... (LibAdm.ConfigureMainRuntime)
30/01/2023 16:04:52		INFO - 30/01/2023 16:04:52 : INFO -
30/01/2023 16:04:52		INFO - Sage Runtime V12 setup 30/01/2023 16:04:52
30/01/2023 16:04:52		INFO - 30/01/2023 16:04:52 : INFO -
30/01/2023 16:04:52		INFO - Starting MAIN Runtime server configuration V12
30/01/2023 16:04:52		INFO - 30/01/2023 16:04:52 : INFO -
30/01/2023 16:04:52		INFO - "-- Sage Runtime server setup --"
30/01/2023 16:04:52		INFO - Reading AdxInstalls on mzWEB1...
30/01/2023 16:04:52		INFO - Information from adxinstalls.xml retrieved.
30/01/2023 16:04:52		INFO - Ok
30/01/2023 16:04:52		INFO - Reading solution.xml on mzWEB1...
30/01/2023 16:04:52		INFO - Database is on mzdb and runtime is on mzWEB1 : distant database setup. (LibAdm.GenSolutionXml)
30/01/2023 16:04:52		INFO - Information from solution.xml retrieved.
30/01/2023 16:04:52		INFO - Ok
30/01/2023 16:04:52		INFO - Starting configuration from Runtime V12, mzWEB1 :
30/01/2023 16:04:56		INFO - Stop service V12 ok on mzweb1.example.lan. (LibAdm.StopAdxdNT)
30/01/2023 16:04:56		INFO - Check application folders on mzweb1.example.lan
30/01/2023 16:04:59		INFO - Directory 'D:\Sage\V12\folders' already exists. No action made. UNC path: \\MZAD\sagedisk
30/01/2023 16:05:00		INFO - Check application folders done
30/01/2023 16:05:02		INFO - Service deletion V12, mzweb1.example.lan ok. (LibAdm.UninstallGesSrv)
30/01/2023 16:05:03		INFO - Services file 'C:\Windows\system32\drivers\etc\Services' updated. (LibAdm.UpdateServicesFile)
30/01/2023 16:05:17		INFO - Transfer of file d:\Sage\V12\runtime\bin\env.bat, mzweb1.example.lan ok.
30/01/2023 16:05:20		INFO - Creation and transfer of file configRuntime.json, mzweb1.example.lan (LibAdm.configRuntime)
30/01/2023 16:05:20		INFO - Starting registry update process on mzweb1.example.lan. (LibAdm.SetupRegistry)
30/01/2023 16:05:33		INFO - Distant registry configuration finished.
30/01/2023 16:05:42		INFO - Creation of SqlServer ODBC data source 'V12' (ODBC Driver 17 for SQL Server) on mzweb1.example.lan ok. (LibAdm.CreateSqlOdbc)
30/01/2023 16:05:42		INFO - Starting service 'V12' on 'mzWEB1'. (LibAdm.InstallGesSrv)
30/01/2023 16:06:02		INFO - Runtime service 'V12' has been started
30/01/2023 16:06:02		INFO - Test connect to 'mzWEB1:20100' from local host mzAD : TCP connection to port 20100 OK
30/01/2023 16:06:02		INFO - Updating Adxinstalls.xml on mzWEB1...
30/01/2023 16:06:03		INFO - Update of adxinstalls.xml ok.
30/01/2023 16:06:03		INFO - Ok

```

30/01/2023 16:06:03 INFO -30/01/2023 16:06:03 INFO - Updating solution.xml on mzWEB1...
30/01/2023 16:06:03 INFO -30/01/2023 16:06:03 INFO - Update of runtime component V12 in solution.xml ok.
30/01/2023 16:06:04 INFO -30/01/2023 16:06:04 INFO - File solution.xml sent on mzWEB1.
30/01/2023 16:06:04 INFO -30/01/2023 16:06:04 INFO - Update of solution.xml ok.
30/01/2023 16:06:04 INFO -30/01/2023 16:06:04 INFO - Ok.
30/01/2023 16:06:04 INFO -30/01/2023 16:06:04 INFO - Runtime server V12 setup finished.
30/01/2023 16:06:04 INFO -30/01/2023 16:06:04 INFO - [End]
30/01/2023 16:06:04 INFO - Main runtime configuration done. (Lib:Admin.ConfigureMainRuntime)
30/01/2023 16:06:04 INFO - Runtime setup finished with status - Ok.
30/01/2023 16:06:04 INFO -
30/01/2023 16:06:04 INFO - Creation of X3APPUI is done.
30/01/2023 16:06:10 INFO - Database schema checked: user 'X3' and roles 'X3_ADX' not found (Run:VerifSchemaBaseSqServer)
30/01/2023 16:06:12 INFO - User for folder X3 will be created. (Lib:Admin.GenerationScriptsAppInt)
30/01/2023 16:06:13 INFO - Directory 'D:\Sage\V12\folders\X3\FIL' initialized.
30/01/2023 16:06:16 INFO - Creation of _ademanrfl.bat.
30/01/2023 16:06:18 INFO - Tables let from FILPLAT in main folder created. (Lib:Admin.GenerationScriptsAppInt)
30/01/2023 16:06:19 INFO - Tables let from FILPLATSYS in main folder created.
30/01/2023 16:06:24 INFO - Creation of _ademanrfl.bat done.
30/01/2023 16:06:27 INFO - File 'D:\Sage\V12\folders\X3\X3APPUI\rs sent on application server mzweb1 example lan.
30/01/2023 16:06:27 INFO - File 'D:\Sage\V12\folders\X3\FILPLAT\rs12_Crler.bat sent on application server mzweb1 example lan.
30/01/2023 16:06:27 INFO - Launching 'rs12_Crler.bat'... (Lib:Admin.RunCreateUserSQLMainNT)
30/01/2023 16:06:37 INFO - Execution of 'rs12_Crler.bat' done.
30/01/2023 16:06:44 INFO - found 'X3'
30/01/2023 16:06:44 INFO - found ALTER_X3 'X3_ADXSYS' 'X3_ADX' 'X3_ADX'
30/01/2023 16:06:44 INFO - found CONTROL_X3 'NULL' 'ALTER' 'CONTROL' 'X3' 'X3'
30/01/2023 16:06:44 INFO - Database schema X3 is available and storages are online (Run:VerifSchemaBaseSqServer)
30/01/2023 16:06:54 INFO - Regeneration in Progress.
Regeneration in Progress : 0 / 0 Regeneration of the Index Table ...
30/01/2023 16:07:04 INFO - Vaffi test performed with success.
30/01/2023 16:07:04 INFO - Database v12 loading ...
30/01/2023 16:07:04 INFO - 782 tables found
30/01/2023 16:07:04 INFO - 0000/782 tables loaded - 00% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:09:38 INFO - 0078/782 tables loaded - 10% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:11:14 INFO - 0156/782 tables loaded - 20% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:13:15 INFO - 0234/782 tables loaded - 30% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:13:40 INFO - 0312/782 tables loaded - 40% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:14:09 INFO - 0390/782 tables loaded - 50% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:14:46 INFO - 0468/782 tables loaded - 60% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:15:10 INFO - 0546/782 tables loaded - 70% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:17:04 INFO - 0624/782 tables loaded - 80% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:18:56 INFO - 0702/782 tables loaded - 90% - 78 tables are being loaded (multi-threading mode)
30/01/2023 16:18:59 INFO - 0780/782 tables loaded - 100% - 2 tables are being loaded (multi-threading mode)
30/01/2023 16:19:01 INFO - Database v12 loaded in 03:12:17:105033
30/01/2023 16:19:01 INFO - Launching 'x3_misc.sql'... (Lib:Admin.LaunchMac)
30/01/2023 16:19:07 INFO - 'D:\Sage\V12\folders\X3\FILPLAT\X3_Misc.sql' executed.
30/01/2023 16:19:07 INFO - All tables loaded into database v12 with no errors. (Lib:Admin.RunVaffiMain)
30/01/2023 16:19:07 INFO - Updating AdminInstalls.xml on mzWEB1...
30/01/2023 16:19:08 INFO - Update of adminInstalls.xml on application server ok.
30/01/2023 16:19:08 INFO - Ok.
  
```

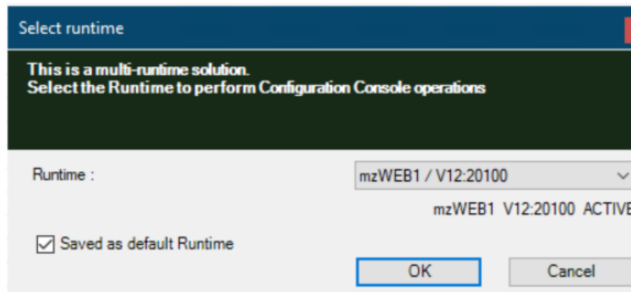
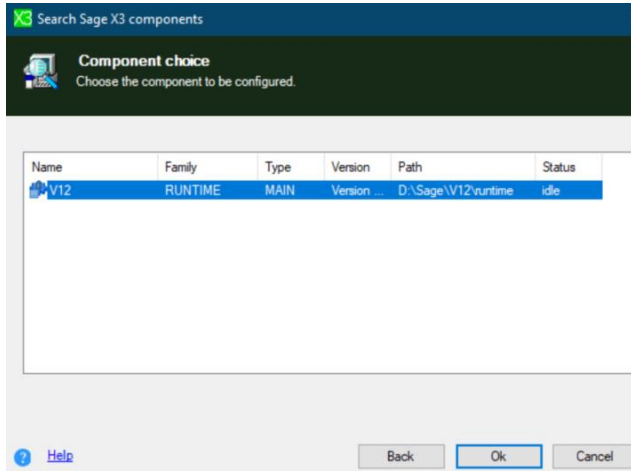
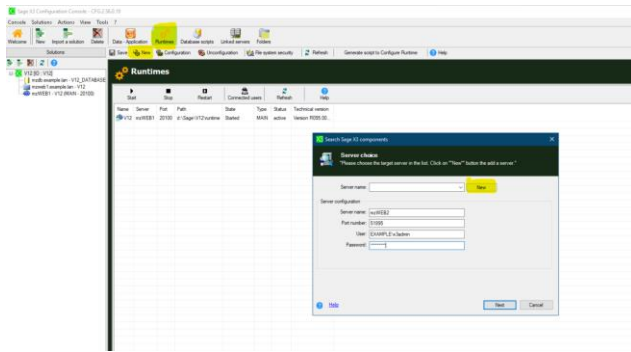


Add mzWEB2 and mzWEB3 as runtimes

Select “Runtimes” button

Click “New”

Create “New” to add the server connection details



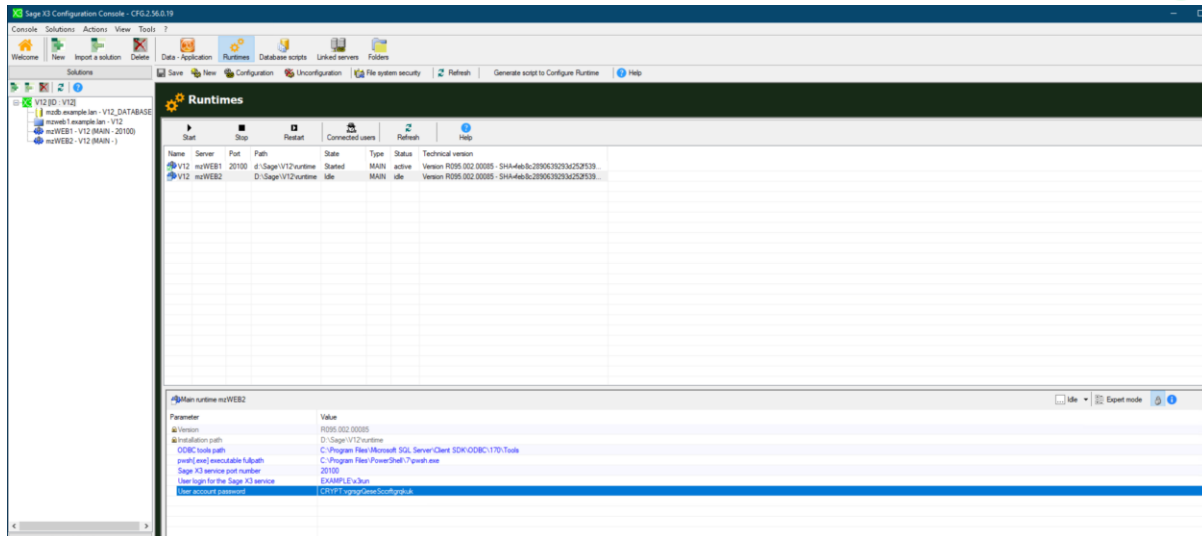
Select the new runtime from the matrix and enter

ODBC tools path = C:\Program Files\Microsoft SQL Server\Client SDK\ODBC\170\Tools
(Wasn't in the drop-down list, caused by not restarting Windows Server after installing the tools!)

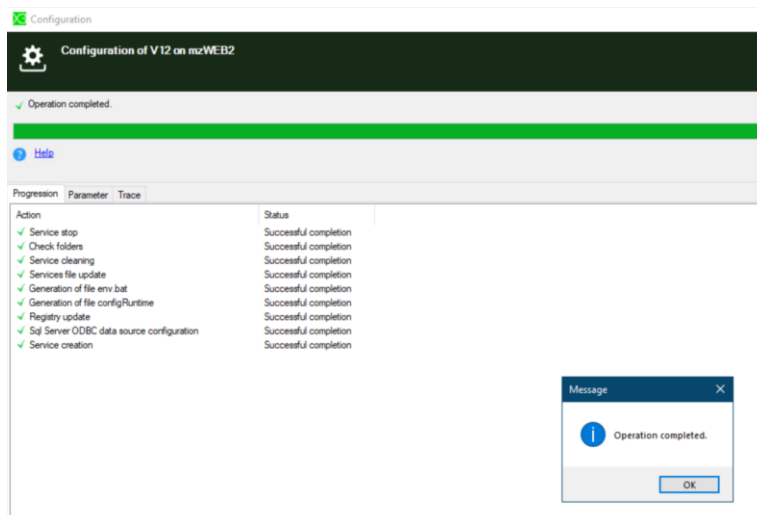
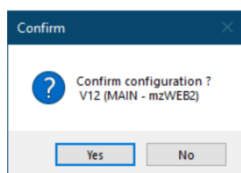
Pwsh[.exe] executable fullpath = C:\Program Files\PowerShell\7\pwsh.exe (From drop-down list)

User login for the SAFE X3 service = EXAMPLE\x3run

User account password



Click “Save” then “Configuration”



```

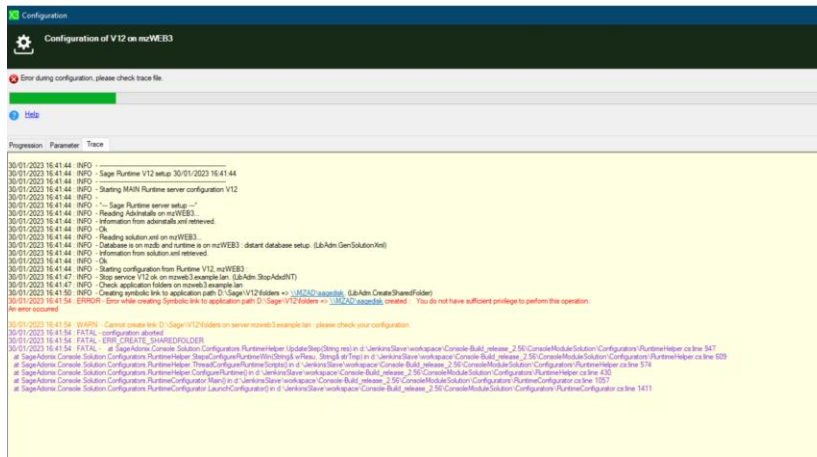
Progression  Parameter  Trace
30/01/2023 16:31:15 : INFO -----
30/01/2023 16:31:15 : INFO - Sage Runtime V12 setup 30/01/2023 16:31:15
30/01/2023 16:31:15 : INFO -----
30/01/2023 16:31:15 : INFO - Starting MAIN Runtime server configuration V12
30/01/2023 16:31:15 : INFO -
30/01/2023 16:31:15 : INFO - *-- Sage Runtime server setup *--
30/01/2023 16:31:15 : INFO - Reading AdxInstalls on mzWEB2...
30/01/2023 16:31:15 : INFO - Information from adxinstalls.xml retrieved.
30/01/2023 16:31:15 : INFO - Ok
30/01/2023 16:31:15 : INFO - Reading solution.xml on mzWEB2...
30/01/2023 16:31:15 : INFO - Database is on mzdab and runtime is on mzWEB2 : distant database setup. (LibAdm.GenSolutionXml)
30/01/2023 16:31:15 : INFO - Information from solution.xml retrieved.
30/01/2023 16:31:15 : INFO - Ok
30/01/2023 16:31:15 : INFO - Starting configuration from Runtime V12, mzWEB2 :
30/01/2023 16:31:19 : INFO - Stop service V12 ok on mzweb2.example.lan. (LibAdm.StopAdxdNT)
30/01/2023 16:31:19 : INFO - Check application folders on mzweb2.example.lan
30/01/2023 16:31:22 : INFO - Creating symbolic link to application path D:\Sage\V12\folders => \\MZAD\sagedisk. (LibAdm.CreateSharedFolder)
30/01/2023 16:31:25 : INFO - Symbolic link to application path D:\Sage\V12\folders => \\MZAD\sagedisk created
30/01/2023 16:31:25 : INFO - Check application folders done
30/01/2023 16:31:27 : INFO - Service deletion V12, mzweb2.example.lan ok. (LibAdm.UninstallGesSrv)
30/01/2023 16:31:28 : INFO - Services file 'C:\Windows\system32\drivers\etc\Services' updated. (LibAdm.UpdateServicesFile)
30/01/2023 16:31:28 : INFO - Transfer of file D:\Sage\V12\runtime\bin\env.bat, mzweb2.example.lan ok.
30/01/2023 16:31:43 : INFO - Creation and transfer of file configRuntime.json, mzweb2.example.lan (LibAdm.configRuntime)
30/01/2023 16:31:43 : INFO - Starting registry update process on mzweb2.example.lan. (LibAdm.SetupRegistry)
30/01/2023 16:31:53 : INFO - Distant registry configuration finished.
30/01/2023 16:32:01 : INFO - Creation of SqlServer ODBC data source 'V12' (ODBC Driver 17 for SQL Server) on mzweb2.example.lan ok. (LibAdm.CreateSqlOdbc)
30/01/2023 16:32:01 : INFO - Starting service 'V12' on 'mzWEB2'. (LibAdm.InstallGesSrv)
30/01/2023 16:32:10 : INFO - Runtime service 'V12' has been started
30/01/2023 16:32:10 : INFO - Test connect to 'mzWEB2:20100' from local host mZAD : TCP connection to port 20100 OK
30/01/2023 16:32:10 : INFO - Updating AdxInstalls.xml on mzWEB2...
30/01/2023 16:32:10 : INFO - Update of adxinstalls.xml ok.
30/01/2023 16:32:10 : INFO - Ok
30/01/2023 16:32:10 : INFO - Updating solution.xml on mzWEB2...
30/01/2023 16:32:10 : INFO - Update of runtime component V12 in solution.xml ok.
30/01/2023 16:32:11 : INFO - File solution.xml sent on mzWEB2.
30/01/2023 16:32:11 : INFO - Update of solution.xml ok.
30/01/2023 16:32:11 : INFO - Ok
30/01/2023 16:32:11 : INFO - Runtime server V12 setup finished.
30/01/2023 16:32:11 : INFO - [End]

```

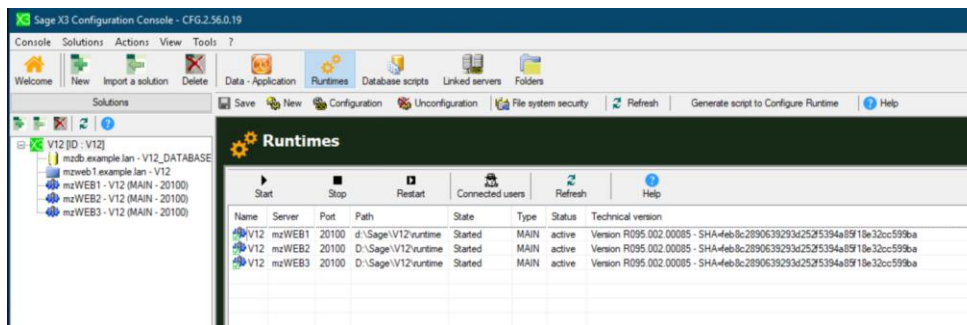
Repeat these steps for mzWEB3 server

Failed with error

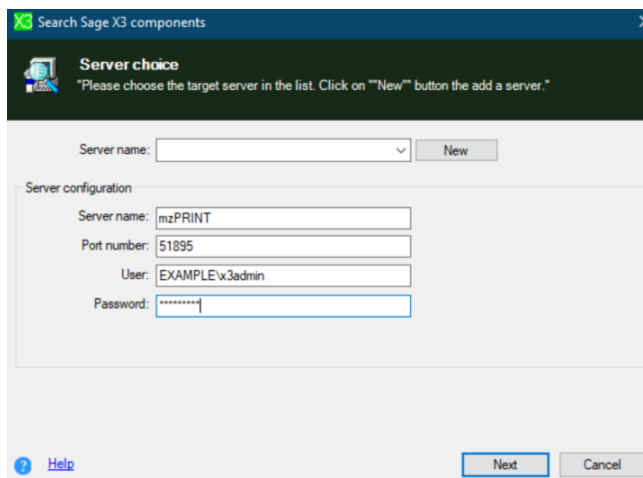
Progression	Parameter	Trace
Action		Status
✓ Service stop		Successful completion
✗ Check folders		Error !!!
Service cleaning		On hold
Services file update		On hold
Generation of file env.bat		On hold
Generation of file configRuntime		On hold
Registry update		On hold
Sql Server ODBC data source configuration		On hold
Service creation		On hold

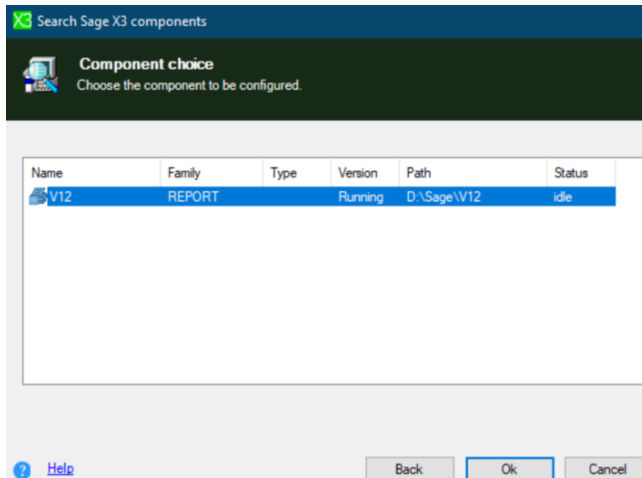


This error was because I had connected to the mzwEB3 server as “x3run” rather than “x3admin”!



Configure Print Server
Create new print server



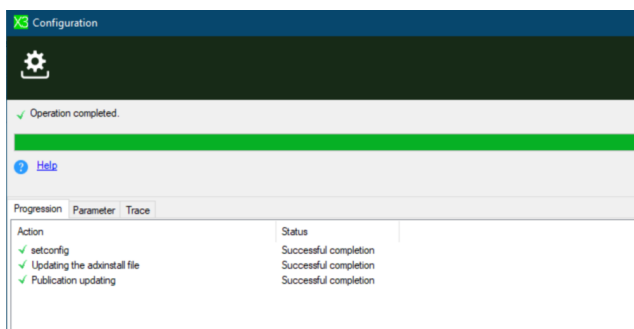
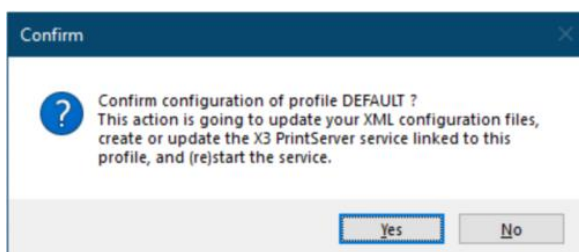
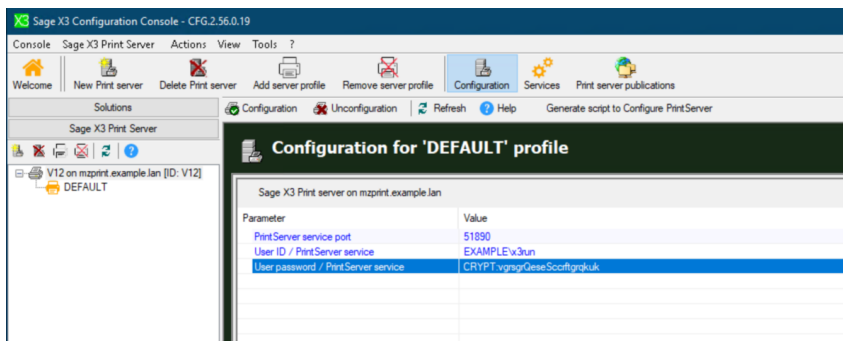


Enter

Print Server service port: 51890

User ID / Print Server service: EXAMPLE\x3run

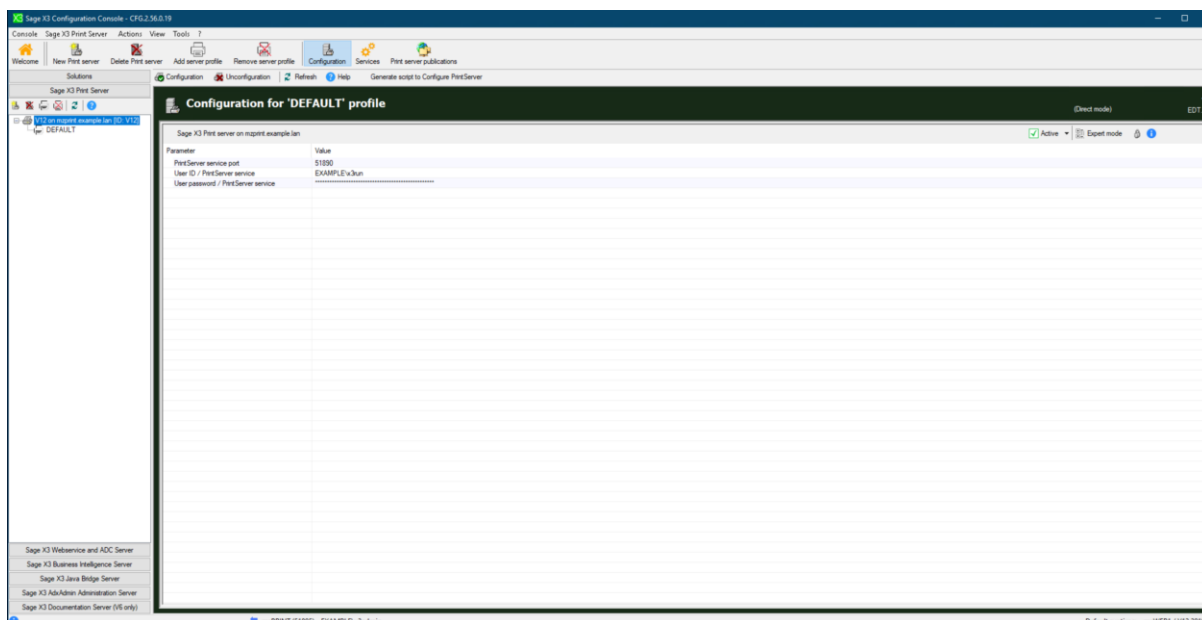
Password




```

Progression  Parameter  Trace
30/01/2023 17:07:04 : INFO - -----
30/01/2023 17:07:04 : INFO - Start of configuration of the Sage X3 Print Server component
30/01/2023 17:07:04 : INFO - -----
30/01/2023 17:07:04 : INFO - Starting configuration 30/01/2023 17:07:04
30/01/2023 17:07:04 : INFO - Starting the configuration update
30/01/2023 17:07:04 : INFO - Reading config file D:\Sage\112\Config\adxeditionserverconfig.xml, server mzprint.example.lan
30/01/2023 17:07:04 : INFO - Saving config file D:\Sage\112\Config\adxeditionserverconfig.xml, server mzprint.example.lan
30/01/2023 17:07:06 : INFO - Config file D:\Sage\112\Config\adxeditionserverconfig.xml saved
30/01/2023 17:07:09 : INFO - Service Safe_X3_SE_V2DEFAULT not found.
30/01/2023 17:07:09 : INFO - Installing service SAFE_X3_SRVEDT_V2_EDT_DEFAULT / SAFE_X3_SE_V2DEFAULT. Running user: EXAMPLE\x3run, server mzprint.example.lan ...
30/01/2023 17:07:11 : INFO - Service installation SAFE_X3_SRVEDT_V2_EDT_DEFAULT / SAFE_X3_SE_V2DEFAULT, server mzprint.example.lan ok.
30/01/2023 17:07:11 : INFO - Starting service(s) Safe_X3_SrvEdt_V2_EDT_DEFAULT, server mzprint.example.lan
30/01/2023 17:07:15 : INFO - Service(s) Safe_X3_SrvEdt_V2_EDT_DEFAULT started, server mzprint.example.lan
30/01/2023 17:07:15 : INFO - Ending the component update
30/01/2023 17:07:15 : INFO - Starting the update of the adxinstalls file
30/01/2023 17:07:16 : INFO - End of the adxinstall file update
30/01/2023 17:07:16 : INFO - Starting the publication update
30/01/2023 17:07:16 : INFO - Ending the publication update
30/01/2023 17:07:16 : INFO - End of configuration 30/01/2023 17:07:16
30/01/2023 17:07:16 : INFO - End of configuration of the Sage X3 Print Server component.
30/01/2023 17:07:16 : INFO - -----

```



I will complete the Print Server configuration once the additional folders are added.

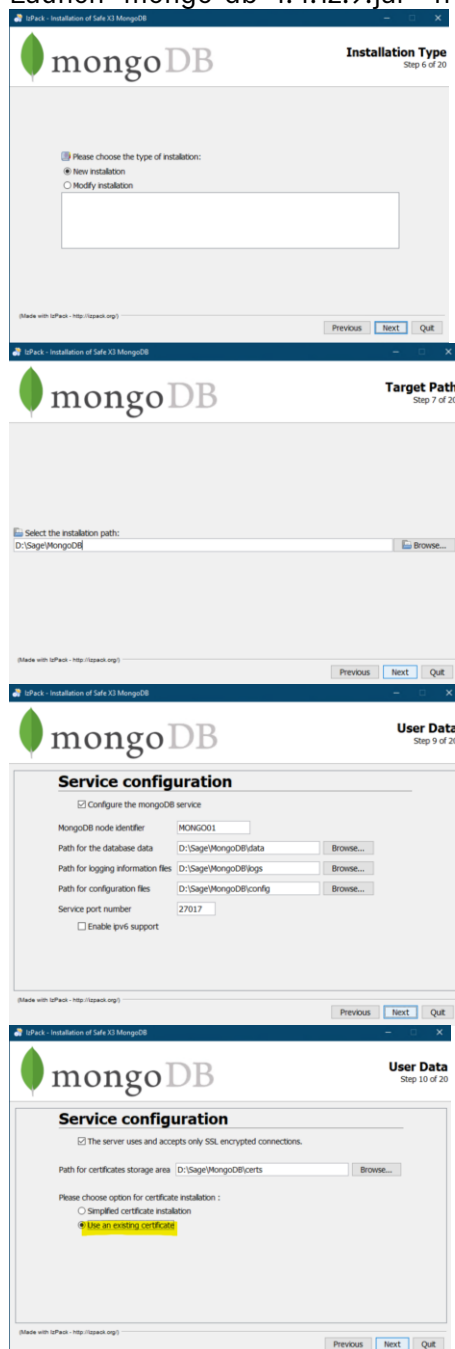
Setup MongoDB Replica Set (mzWEB1, mzWEB2, mzWEB3)

Installation

On all three servers:

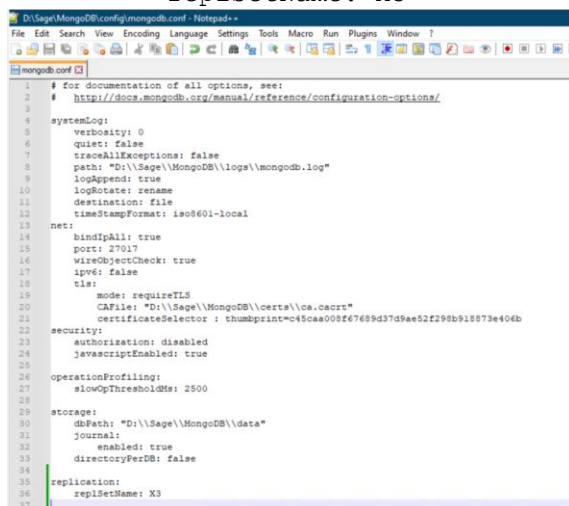
Copy “Z:\Certs_Mongo” to local disk “Documents” directory (Created these certificates using the “mzCertificates” scripts)

Launch “mongo-db-4.4.12.9.jar “ from directory “Z:\Sage\ISO\X3\Installs\MongoDB”





Update mongod.conf to add:
 replication:
 replSetName: X3



Restart MongoDB

Implement MongoDB Replica Set

Implement “Investigation Scripts” to use “mzMongoShell.cmd” or use your own favourite Mongo Shell, on mzWEB1, mzWEB2 and mzWEB3

Copy “client.pem” from “Documents\Certs_Mongo” to “D:\Sage\MongoDB\certs”

Run the following on mzWEB1 only:

- Setup the Replica Set
- ```
rs.initiate()
rs.add({ host: "mzWEB2:27017" })
rs.add({ host: "mzWEB3:27017" })
```

```

C:\Windows\system32\cmd.exe
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
https://docs.mongodb.com/
Questions? Try the MongoDB Developer Community Forums
https://community.mongodb.com

Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()

> rs.initiate()
{
 "info": "no configuration specified. Using a default configuration for the set",
 "msg": "mzWEB1:27017",
 "ok": 1
}
X3:SECONDARY>
X3:PRIMARY>
X3:PRIMARY> rs.add({ host: "mzWEB2:27017" })
{
 "ok": 1,
 "$clusterTime": {
 "clusterTime": Timestamp(1675181934, 1),
 "signature": {
 "hash": BIData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAAA"),
 "keyid": NumberLong(0)
 }
 },
 "operationTime": Timestamp(1675181934, 1)
}
X3:PRIMARY> rs.add({ host: "mzWEB3:27017" })
{
 "ok": 1,
 "$clusterTime": {
 "clusterTime": Timestamp(1675181949, 2),
 "signature": {
 "hash": BIData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAAA"),
 "keyid": NumberLong(0)
 }
 },
 "operationTime": Timestamp(1675181949, 2)
}
X3:PRIMARY>

```

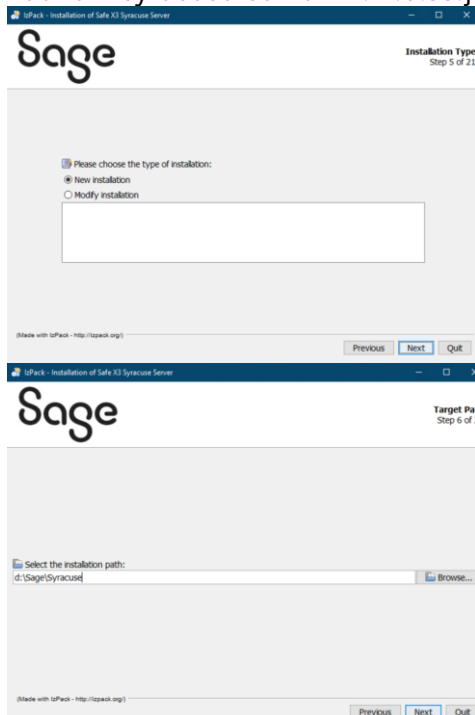
The MongoDB Replica Set is now operational.

- Check configuration  
rs.conf()
- Check status  
rs.status()

### Install Syracuse (mzWEB1, mzWEB2, mzWEB3)

Copy “Z:\Sage\License” folder to local disk “Documents” directory

Launch “syracuse-server-12.17.0.33.jar “ from directory “Z:\Sage\ISO\X3Installs\SyracuseServer”



Installation of Sage X3 Syracuse Server

**Sage** User Data Step 8 of 21

### Syracuse service configuration

(\*) All fields are mandatory.

Syracuse node identifier: NODE0

Path for logging information files: d:\Sage\Syracuse\syracuse\logs Browse...

Http Service port number: 8124

Number of Syracuse processes: 2

Number of web services processes: 1

License file: C:\12\_License\_Sage\_UK\_31.05.23.json Browse...

Warning: You must provide an account and a password in order to create a service. This account must be valid and must have the 'log on as a service' right.

Service user: EXAMPLE\3chan

Password for this account: \*\*\*\*\*

Buttons: Previous, Next, Quit

Installation of Sage X3 Syracuse Server

**Sage** User Data Step 9 of 21

### Certificate management

Path for certificates storage area: d:\Sage\Syracuse\syracuse\certs Browse...

Please choose option for certificate:

- Simplified certificate installation for a single server
- Use an existing certificate

Buttons: Previous, Next, Quit

Installation of Sage X3 Syracuse Server

**Sage** User Data Step 10 of 21

### Certificate Authority (CA) setup

Passphrase can contain all printable alphanumeric and nonalphanumeric characters (\*) All fields are mandatory.

Passphrase of CA: \*\*\*\*\*

Verification: \*\*\*\*\*

Buttons: Previous, Next, Quit

Installation of Sage X3 Syracuse Server

**Sage** User Data Step 11 of 21

### Certificate data

Country code: GB

State: Berkshire

City: Winkersb

Organization: Sage

Organizational unit: UK

Name: x3admin

Email: x3admin@example.in

Days of validity: 3650

Buttons: Previous, Next, Quit

Installation of Sage X3 Syracuse Server

**Sage** User Data Step 12 of 21

### Host setup

Passphrase can contain all printable alphanumeric and nonalphanumeric characters

Passphrase of server: \*\*\*\*\*

Verification: \*\*\*\*\*

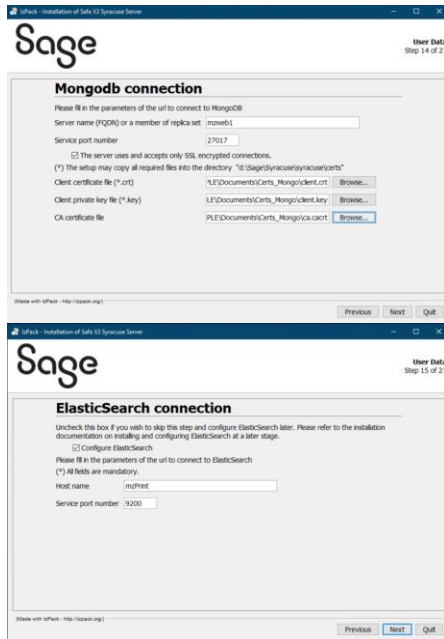
Name of the server (FQDN): mweb1

Destination directory for certificate tool: d:\Sage\Syracuse\syracuse\certs\_tool Browse...

Specify an X3 runtime path and install certificates

Specify an X3 web services server path and install certificates

Buttons: Previous, Next, Quit



Create certificates on mzWEB1 server for mzWEB2 and mzWEB3 using “certgen.bat “ in the “D:\Sage\Syracuse\syracuse\certs\_tools” directory.

```

C:\Windows\system32\cmd.exe
(6) Show certificate data
(7) Show certificate data of all certificates
(8) Delete certificate and private key for the named server
(9) Transfer certificate and private key to the named server
(10) End
Please enter the number of the option: 1

Task: Create new certificate and private key
Name of server: mzweb2
Server name for TCP connections [mzweb2]:
Enter days of validity (when input is empty, validity will be until 28 January 2033 16:37:58 GMT):
Enter passphrase for new private key:
Confirm passphrase of private key:
Enter passphrase of private key of CA certificate:
Read private key private/ca.cakey ...
Port of Syracuse server 'mzweb2' if data should be transferred (no transfer for value 0) [0]:
Generate key pair ...
Generate certificate ...
Write private key output/mzweb2.key ...
Write certificate output/mzweb2.crt ...
Write public key output/mzweb2.pem ...
Finished

Which task do you want to perform?
(1) Create new certificate and private key
(2) Renew the validity of the certificates
(3) Renew the validity of all certificates
(4) Generate new private key and create certificate with same subject as before
(5) Change the subject of the certificate
(6) Show certificate data
(7) Show certificate data of all certificates
(8) Delete certificate and private key for the named server
(9) Transfer certificate and private key to the named server
(10) End
Please enter the number of the option: 1

Task: Create new certificate and private key
Name of server: mzweb3
Server name for TCP connections [mzweb3]:
Enter days of validity (when input is empty, validity will be until 28 January 2033 16:37:58 GMT):
Enter passphrase for new private key:
Confirm passphrase of private key:
Port of Syracuse server 'mzweb3' if data should be transferred (no transfer for value 0) [0]:
Generate key pair ...
Generate certificate ...
Write private key output/mzweb3.key ...
Write certificate output/mzweb3.crt ...
Write public key output/mzweb3.pem ...
Finished

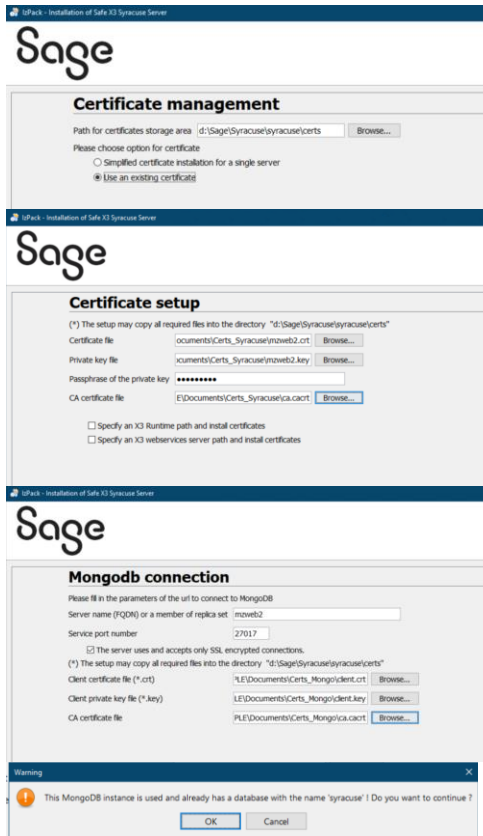
Which task do you want to perform?
(1) Create new certificate and private key
(2) Renew the validity of the certificates
(3) Renew the validity of all certificates
(4) Generate new private key and create certificate with same subject as before
(5) Change the subject of the certificate
(6) Show certificate data
(7) Show certificate data of all certificates
(8) Delete certificate and private key for the named server
(9) Transfer certificate and private key to the named server
(10) End
Please enter the number of the option: 10

```

Copy over the files created in “D:\Sage\Syracuse\syracuse\certs\_tools\output” to the relevant server, into their “Documents\Certs\_Syracuse” directory.

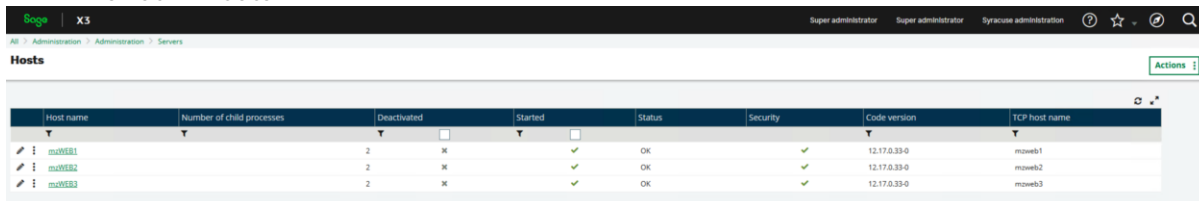
Copy the three PEM files (mzweb1.pem, mzweb2.pem and mzweb3.pem) into the “D:\Sage\V12\runtime\keys” directory on mzWEB1, mzWEB2 and mzWEB3 servers.

Install Syracuse on mzWEB2 and mzWEB3, but this time select “Use an existing certificate” when prompted for “Certificate Management” and use the existing certificates just copied over, being careful to pick up the correct certificates when asked for Syracuse and then Mongo certificate files.



## Finish classic setup

Launch X3 and login as ADMIN user  
Check “Hosts”

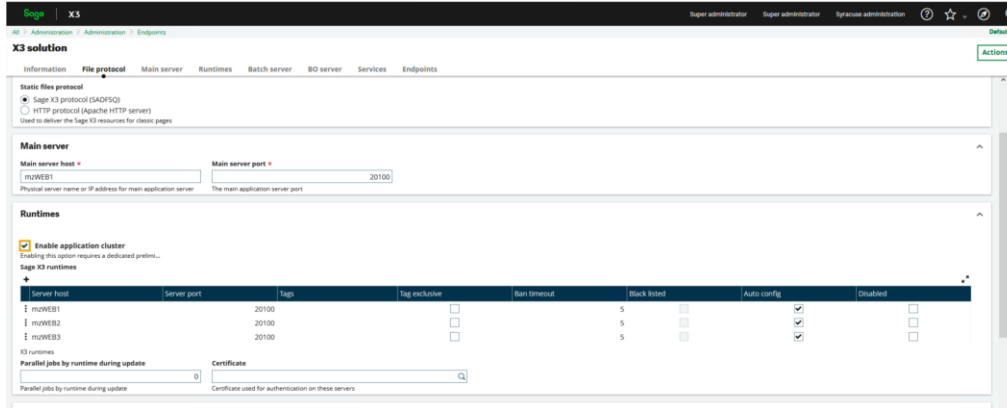


## Configure X3 Solution

Navigate to Administration, Administration, Endpoints, X3 solutions  
From the “Actions” pick “New X3 Solutions”  
Enter the required information:  
Code = V12  
Description = V12

Solution Name = V12  
 Main server host = mzWEB1  
 Main server port = 20100  
 Enable application cluster = Checked

The runtimes should automatically load after a few seconds

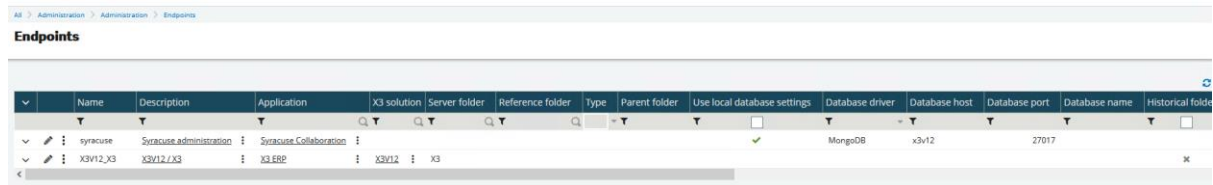


Click "Save"

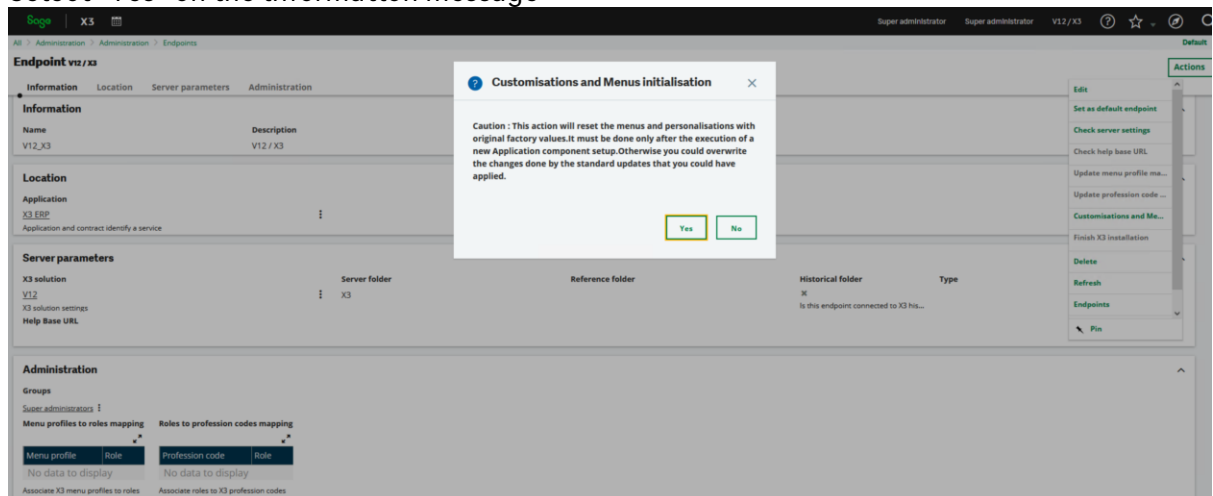
Logout and login again  
 Select X3 endpoint

Perform personalization and menu initialization.

Navigate to Administration, Administration, Endpoints, Endpoints  
 Edit the X3V12\_X3 entry



From the Actions, select "Customisations and Menu installation from X3 folder"  
 Select "Yes" on the information message



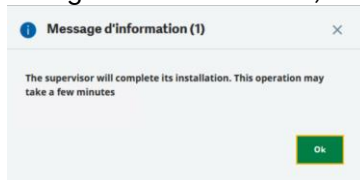


Log out of X3

### Installation of Supervisor component

Log back in as ADMIN user, make sure the X3 endpoint is selected

Navigate to Parameters, Users, Users



Click OK to continue

Once completed, logout again

### Finish Syracuse setup

On all Syracuse servers, edit “D:\Sage\Syracuse\syracuse\bin\nodelocal.js” and add the following section to disable inter-node load balancing. Then restart Syracuse for this change to take effect

```
hosting: {
 localBalancer: true,
},
```

Setup SSL connections (Port 443)

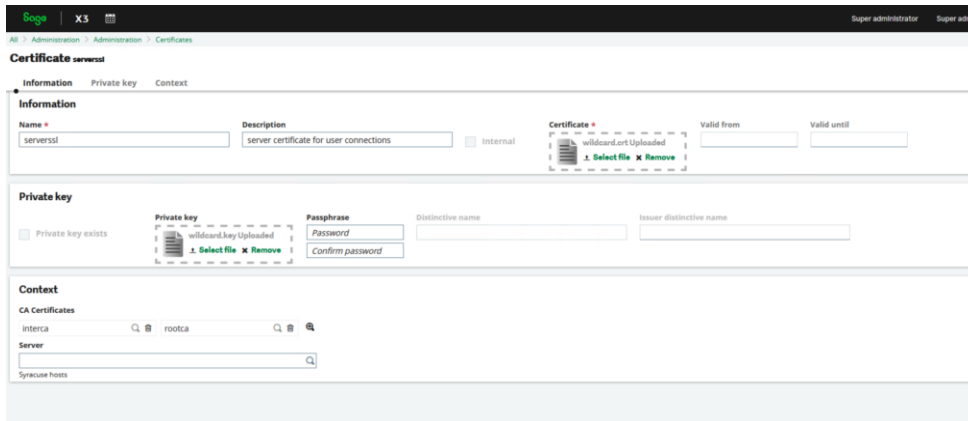
Use “Z:\Software\mzCertificates\SyracuseTLS\mzSyracuse\_TLS.cmd”

I will then edit and run the “mzSyracuse\_TLS\_WildCard.cmd” script to create a wildcard certificate for my domain “example.lan”

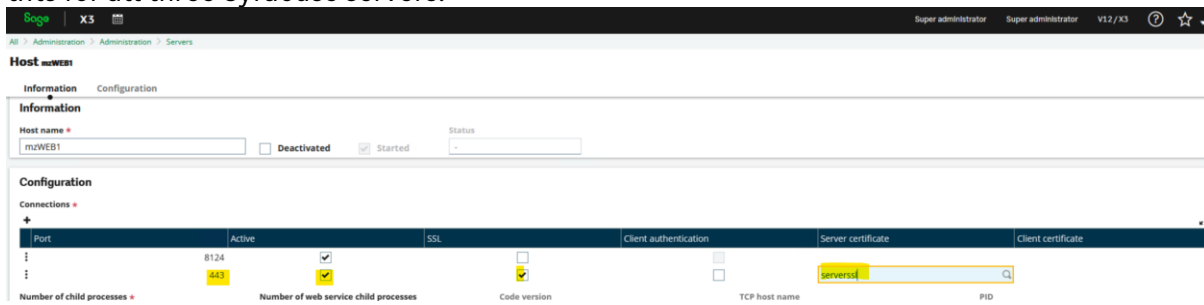
Use Administration, Administration, Certificates, Certificates of Certification Authorities to load the root and intermediate CA certificates

| Name         | Description                                      | Internal                            | Distinctive name                                                     | Issuer distinctive name                                             | Valid from       | Valid until      |
|--------------|--------------------------------------------------|-------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------|------------------|------------------|
| ca           |                                                  | <input checked="" type="checkbox"/> | C=GB, ST=Berkshire, L=Winnersh, O=Sage, OU=UK, CN=3admin             | C=GB, ST=Berkshire, L=Winnersh, O=Sage, OU=UK, CN=3admin            | 31/01/2023 16:37 | 28/01/2023 16:37 |
| intermediate | Intermediate CA certificate for user connections | <input checked="" type="checkbox"/> | C=GB, ST=Berkshire, L=Winnersh, O=Sage UK Ltd, OU=UK, CN=TestInterCA | C=GB, ST=Berkshire, L=Winnersh, O=Sage UK Ltd, OU=UK, CN=TestRootCA | 26/05/2023 13:52 | 25/05/2024 13:52 |
| root         | Root CA certificate for user connections         | <input checked="" type="checkbox"/> | C=GB, ST=Berkshire, L=Winnersh, O=Sage UK Ltd, OU=UK, CN=TestRootCA  | C=GB, ST=Berkshire, L=Winnersh, O=Sage UK Ltd, OU=UK, CN=TestRootCA | 31/01/2023 15:51 | 28/01/2023 15:51 |

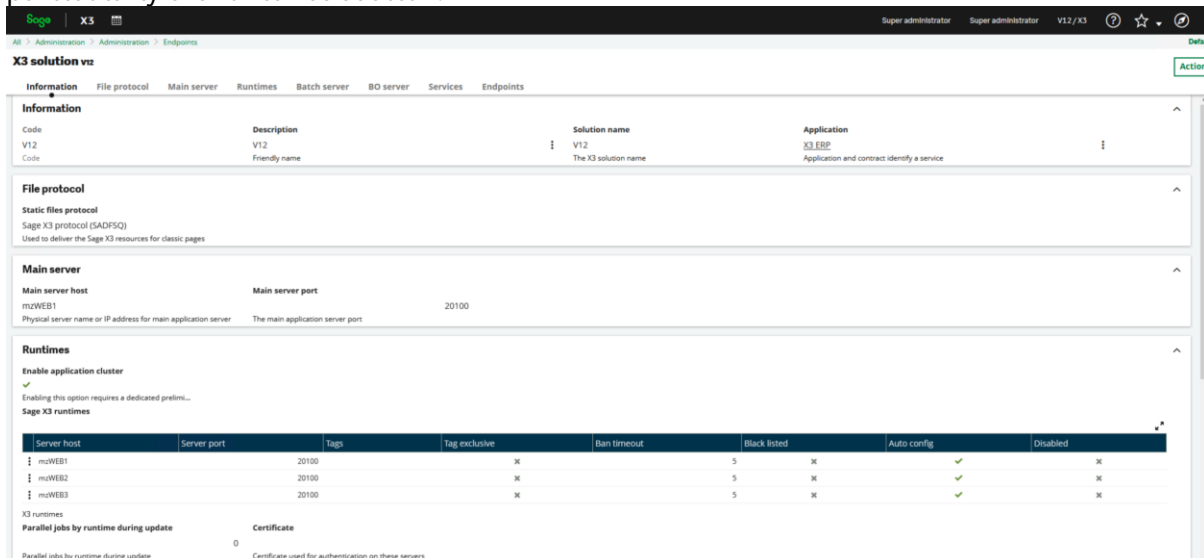
Use Administration, Administration, Certificates, Certificates to load the server certificate.



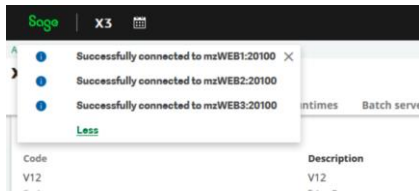
Use Administration, Administration, Servers, Hosts to add the new port with SSL certificate. Do this for all three Syracuse servers.



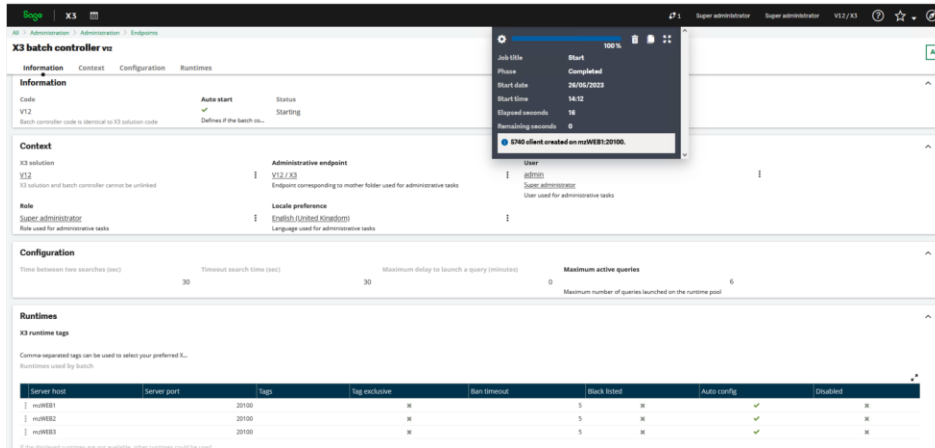
Use Administration, Administration, Endpoints, X3 solution to check the settings look OK, particularly the runtimes section.



Run the “Check all servers settings” option, using the X3 folder



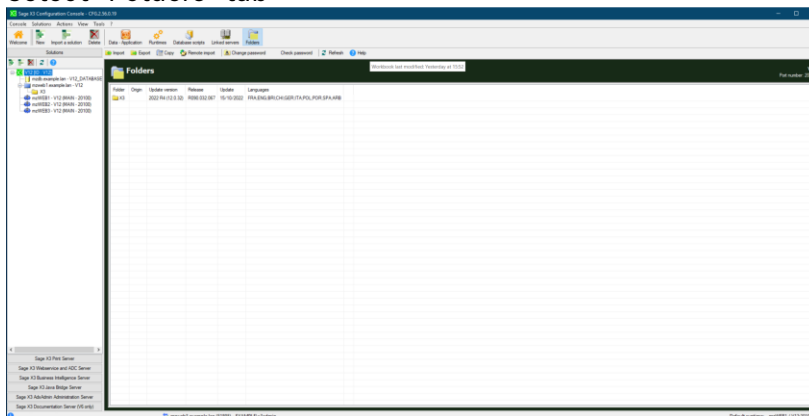
Use Administration, Administration, Endpoints, Batch server to check and then startup the batch server. (It will be “Stopped” status at this point)  
I am changing to “Auto Start”, locale preference to UK English and Maximum active queries to 6, then “Start”



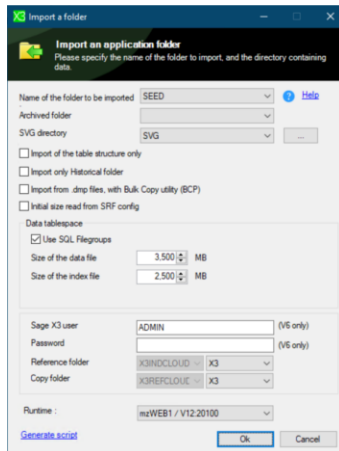
### Install SEED folder (mzWEB1)

Download SEED ISO image for 2022 R4 and mount the iso file “x3-seed-12.0.32.iso”  
Extract ZIP file “x3-seed-12.0.33.zip” to “D:\Sage\V12\folders\”

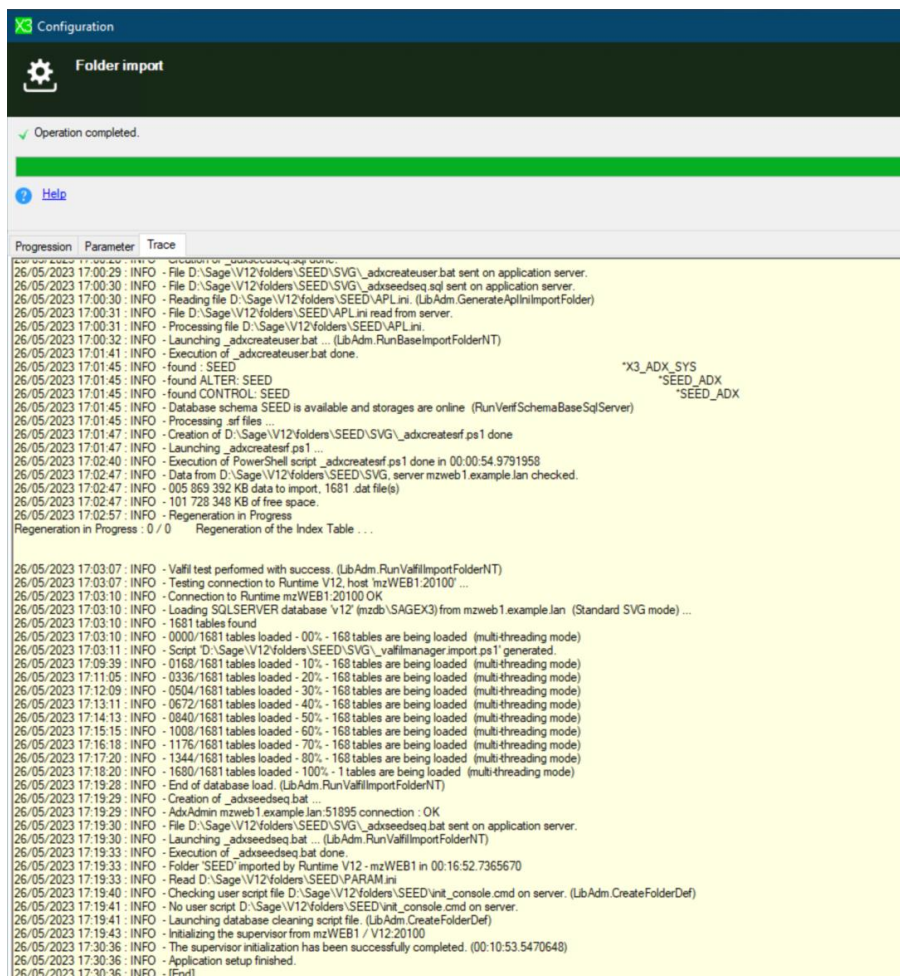
Once unzip has completed, launch X3 console  
Select “Folders” tab

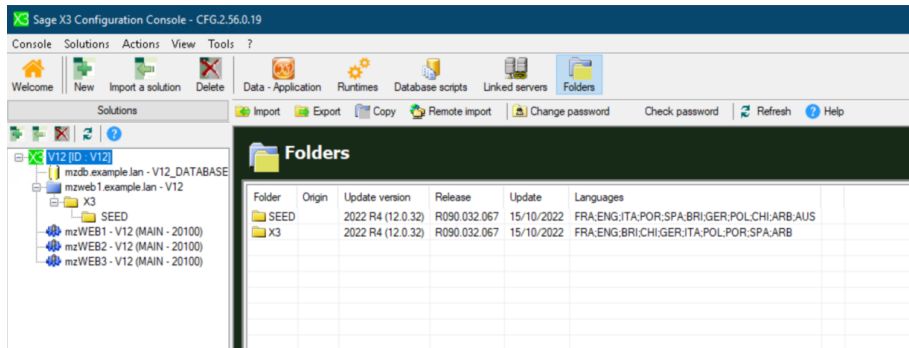


Select “Import” then click OK to launch the import.



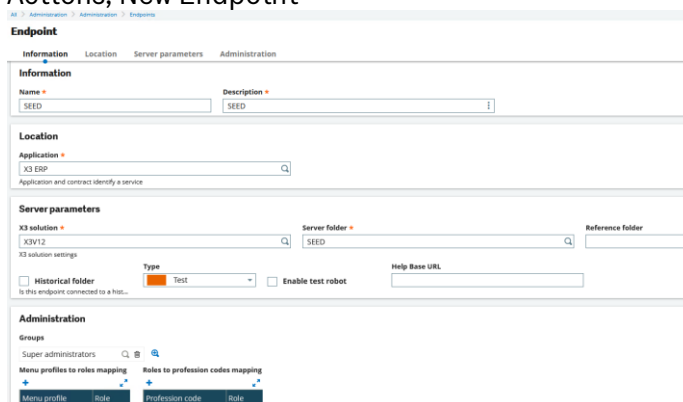
Once the import has completed, check the folder details look OK. The X3 Console log file will be located in “C:\Users\x3admin\AppData\Roaming\Sage\Console\traces\gtrace.tra” by default. (As I am doing the install as “x3admin” user)





## Create SEED Endpoint in Syracuse

Navigate to Administration, Administration, Endpoints, Endpoints Actions, New Endpoint



Save the record

Logout and login again.

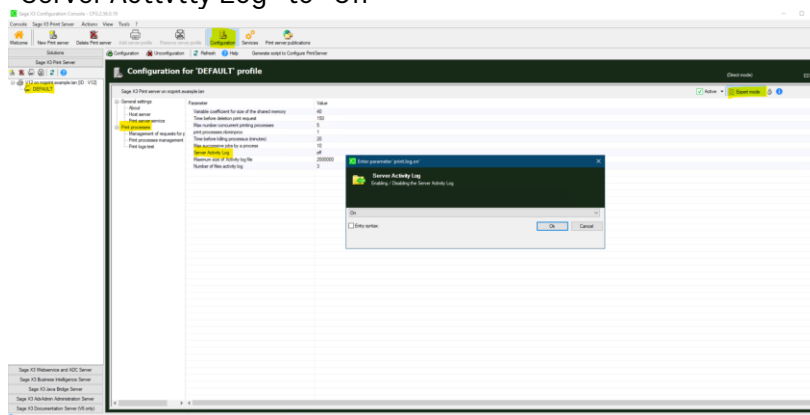
Select SEED folder and confirm looks OK

## Finalise Print Server configuration

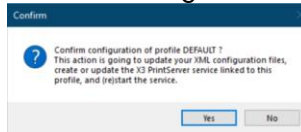
Setup SEED folder in X3 Console for Print Server

In X3 console, select Sage X3 Print Server

(Optional) in Configuration, select “Expert mode” then “Print Processes” and change “Server Activity Log” to “On”



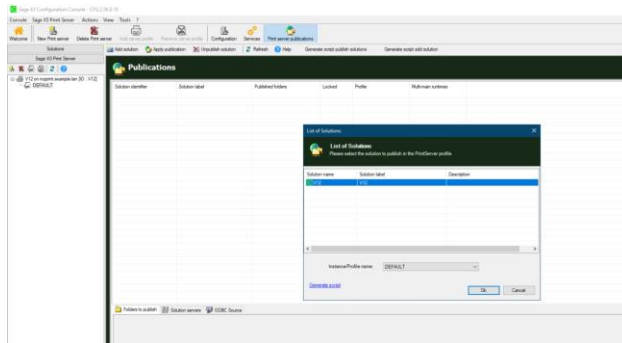
Select “Configuration” to save the change



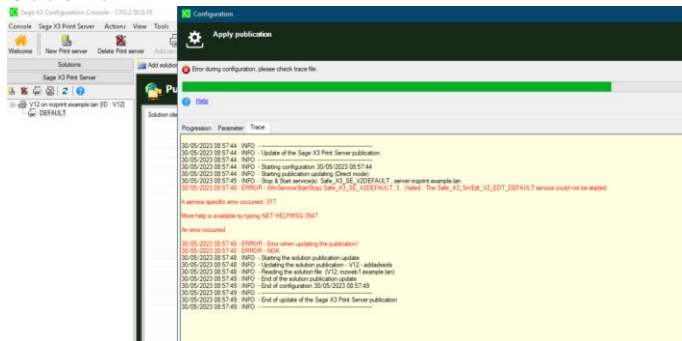
Select Print Server publications

Add solution

Click OK to continue



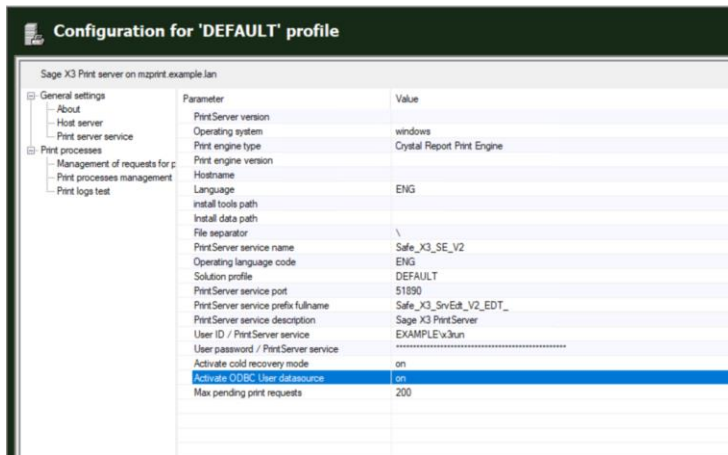
Got error



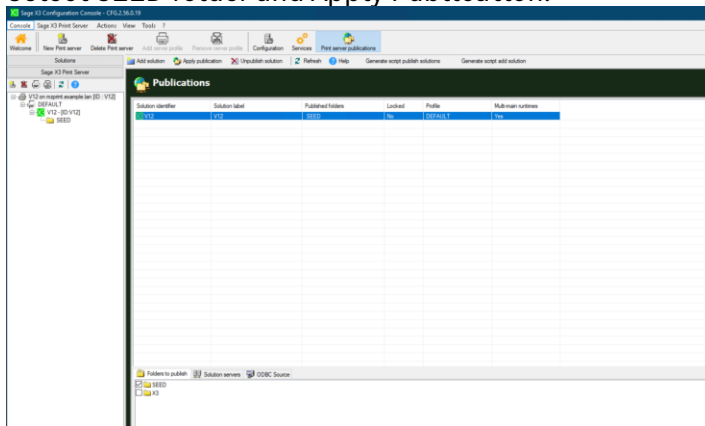
In the Print Server Windows Event logs see error:

```
TimeGenerated : 30/05/2023 09:04:18
Source : AdxSrvImp
UserName :
EntryType : Error
EventID : 2
Message : The description for Event ID '2' in Source 'AdxSrvImp' cannot be found. The local computer may not have the necessary registry information or message DLL files to display the message, or you may not have permission to access them. The following information is part of the event:
'Message 317 [Type 16
- Function : SrvImp_ctrlOdbcDS] ', 'Error during the creation of a data source ODBC', '
Detail : ', 'Data Source : ADX_V12 [mzdb.example.lan\SAGEX3 - v12 ()]'
```

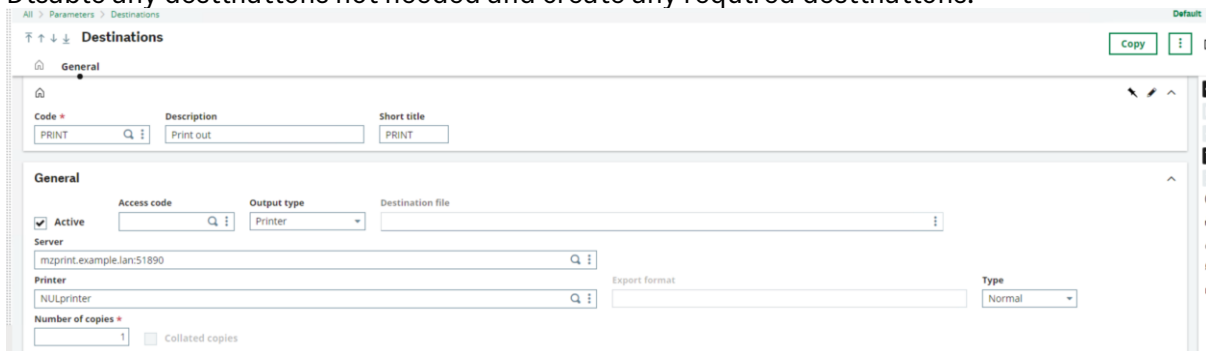
Seems to be permissions issue with the X3RUN Windows account, so in console, set “Activate ODBC user datasource” to “On”



Select SEED folder and Apply Publication.



Setup Destination PRINT to print to the HP windows printer  
 Connect to SEED folder  
 Navigate to Parameters, Destinations, Destinations  
 Disable any destinations not needed and create any required destinations.



## Final steps

Re-save SEED folder and re-validate

Parameters, General Parameters, Folders

For my license, I need to remove activity codes CTSW, DLROE, PORP and localisations KAE, KBH, KSA, KRU

Click "Validation" accepting default values

(Optional) Run SVG export of SEED folder from Console, using Native Dump Mode

## Tidying up

- Setup ADMIN user as UK language
- Set Administration, Global Settings as you like... for me this is to:
  - Set “Global default locale” to UK
  - In “Logs” set Max size to 200 and Max days to 15.
  - In server logs grid set the following to “info” level logging
    - http.in
    - http.out
    - lb.request
    - memory
  - In “history” enable history log for “users”

## Elastic Search

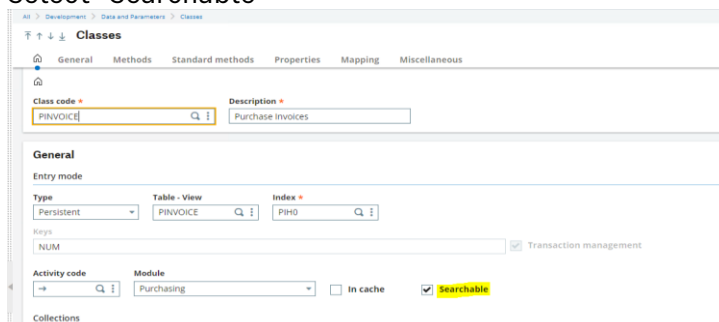
- Setup Purchase Invoices to be searchable

Login and connect to SEED folder

Development, Data and Parameters, Classes, Classes

Query back PINVOICE

Select “Searchable”

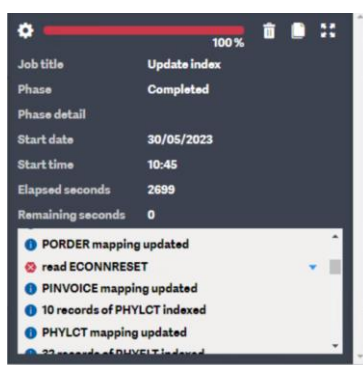


Save and Validate

- Setup schedule for Elastic Search for the SEED folder

Administration, Usage, Search Index Management

Run the update manually, selecting the “Delete indexes before update” option





I'll come back to my error on PINVOICE later (I might have needed to restart Syracuse after my classes change perhaps?)

Check can now query back using "customer" as a keyword (or run any query)

The screenshot shows a search interface with the following sections:

- Search results starting with 'customer'**: Search option: **Widen result set to similar results**. 107 Results Display: 1-23456.
- FUNCTIONS (107)**: Lists various functions like 'Customers', 'Inactive Customers', and 'Customers/Categories' with details on code, title, description, and application.
- DATA (88)**: Lists account numbers such as BEG-290000, BEG-400000, IFR-411000, IFR-411000, IIT-411000, IIT-411000, BEI-290000, and BEI-400000, each with 'Translatable title' and 'Short title'.
- FILTERS FOR DATA**: Includes filters for TYPE (Accounts, Statistical parameters, Dimensions, Dimension Defaults, Function Profile, Users, Statistical Triggers, Changeover).

Create the schedule  
Administration, Usage, Automation, Scheduler  
New schedule  
Schedule ElasticSearch

The screenshot shows the 'Information' tab of the ElasticSearch schedule configuration:

- Information**: Schedule name: ElasticSearch; Server logs expiry: 30; Last started: Last completed; Status: Planned.
- Events**: Shows a table with columns: Description, Event type, Frequency, Next run, Suspended. One event is listed: ElasticSearch daily, Time, Every day, 03/09/2020 14:00.
- Server Times**: A dropdown menu showing the time 14:00.

Setup Elastic Search index update to run using the schedule  
Administration, Usage, Search Index Management

The screenshot shows the 'Automation schedules' dialog box with the following details:

- Search indexes administration**: Endpoint: SEED; Entities: English (United Kingdom);  Delete indexes before update;  Update modified records only.
- Automation schedules**: A table with columns: Schedule name, Server logs expiry, Last started, Last completed, Status. One schedule is listed: ElasticSearch, 30, Planned.

## Install Apache and configure as Load Balancer

The simplest way to handle multiple Syracuse nodes is to have a load balancer in front of them to handle the user redirection. This will allow you to load balance both interactive users and SOAP requests. This allows us to only open port 443 to one entry point (the load balancer) which is more secure as well.

In my case, I do not have access to hardware load balancers, so will install Apache onto my MZAD server and configure this to be used as a load balancer.

NOTE: Apache is not needed nor used, as part of my X3 installation. It is purely being used as a software load balancer, independent from X3.

### Install Apache

Extract “httpd-2.4.54-win64-VS16.zip” from directory “D:\Software\Apache” to “D:\” This extracts to directory “D:\Apache24”

Edit httpd.conf to change port number being used, set servername and change SRVROOT

```
Define SRVROOT "d:/Apache24"
```

```
Listen 8080
```

```
 ServerName MZAD
```

Launch Command prompt using “As administrator” and run the following:

```
cd /d D:\Apache24\bin
```

```
httpd -k install
```

```
httpd -k start
```

Test it works OK with following URL

<http://localhost:8080/>

Stop Apache service

Copy config files “mzSage-ssl-LBR.conf” and “httpd\_2.4.conf” into “D:\Apache24\conf” (See Appendix A)

Edit “httpd\_2.4.conf” as needed, then replace “httpd.conf” with “httpd\_2.4.conf”

Edit “mzSage-ssl-LBR.conf” as needed

Restart Apache service. If it fails to start you can quickly check for errors by starting from command prompt with command:

```
D:\Apache24\bin\httpd -f D:\Apache24\conf\httpd.conf
```

Test you can login using URL <https://mzad/> and that the load balancing is working to the three Syracuse nodes as expected.

## Conclusion

This "Build diary" document provides the steps I took on my internal servers to create a new installation with multiple VMs to allow for configuration of a MongoDB cluster, Syracuse cluster and Application Cluster.

## Appendix A – Apache software load balancer files

### httpd\_2.4.conf

```

#
This is the main Apache HTTP server configuration file. It contains the
configuration directives that give the server its instructions.
See <URL:http://httpd.apache.org/docs/2.4/> for detailed information.
In particular, see
<URL:http://httpd.apache.org/docs/2.4/mod/directives.html>
for a discussion of each configuration directive.
#
Do NOT simply read the instructions in here without understanding
what they do. They're here only as hints or reminders. If you are unsure
consult the online docs. You have been warned.
#
Configuration and logfile names: If the filenames you specify for many
of the server's control files begin with "/" (or "drive:" for Win32), the
server will use that explicit path. If the filenames do *not* begin
with "/", the value of ServerRoot is prepended -- so "logs/access_log"
with ServerRoot set to "/usr/local/apache2" will be interpreted by the
server as "/usr/local/apache2/logs/access_log", whereas "/logs/access_log"
will be interpreted as '/logs/access_log'.
#
NOTE: Where filenames are specified, you must use forward slashes
instead of backslashes (e.g., "c:/apache" instead of "c:\apache").
If a drive letter is omitted, the drive on which httpd.exe is located
will be used by default. It is recommended that you always supply
an explicit drive letter in absolute paths to avoid confusion.
#
#
ServerRoot: The top of the directory tree under which the server's
configuration, error, and log files are kept.
#
Do not add a slash at the end of the directory path. If you point
ServerRoot at a non-local disk, be sure to specify a local disk on the
Mutex directive, if file-based mutexes are used. If you wish to share the
same ServerRoot for multiple httpd daemons, you will need to change at
least PidFile.
#
Define SRVROOT "d:/Apache24"
ServerRoot "${SRVROOT}"
#
Mutex: Allows you to set the mutex mechanism and mutex file directory
for individual mutexes, or change the global defaults
#
Uncomment and change the directory if mutexes are file-based and the default
mutex file directory is not on a local disk or is not appropriate for some
other reason.
#
Mutex default:logs
#
Listen: Allows you to bind Apache to specific IP addresses and/or
ports, instead of the default. See also the <VirtualHost>
directive.
#
Change this to Listen on specific IP addresses as shown below to
prevent Apache from glomming onto all bound IP addresses.
#
#Listen 12.34.56.78:80
Listen 8080
#
Dynamic Shared Object (DSO) Support
#
To be able to use the functionality of a module which was built as a DSO you
have to place corresponding 'LoadModule' lines at this location so the

```

```

directives contained in it are actually available _before_ they are used.
Statically compiled modules (those listed by `httpd -l`) do not need
to be loaded here.
#
Example:
LoadModule foo_module modules/mod_foo.so
#
LoadModule access_compat_module modules/mod_access_compat.so
LoadModule actions_module modules/mod_actions.so
LoadModule alias_module modules/mod_alias.so
LoadModule allowmethods_module modules/mod_allowmethods.so
LoadModule asis_module modules/mod_asis.so
LoadModule auth_basic_module modules/mod_auth_basic.so
#LoadModule auth_digest_module modules/mod_auth_digest.so
#LoadModule auth_form_module modules/mod_auth_form.so
#LoadModule authn_anon_module modules/mod_authn_anon.so
LoadModule authn_core_module modules/mod_authn_core.so
#LoadModule authn_dbd_module modules/mod_authn_dbd.so
#LoadModule authn_dbm_module modules/mod_authn_dbm.so
LoadModule authn_file_module modules/mod_authn_file.so
#LoadModule authn_socache_module modules/mod_authn_socache.so
#LoadModule authnz_fcgi_module modules/mod_authnz_fcgi.so
#LoadModule authnz_ldap_module modules/mod_authnz_ldap.so
LoadModule authz_core_module modules/mod_authz_core.so
#LoadModule authz_dbd_module modules/mod_authz_dbd.so
#LoadModule authz_dbm_module modules/mod_authz_dbm.so
LoadModule authz_groupfile_module modules/mod_authz_groupfile.so
LoadModule authz_host_module modules/mod_authz_host.so
#LoadModule authz_owner_module modules/mod_authz_owner.so
LoadModule authz_user_module modules/mod_authz_user.so
LoadModule autoindex_module modules/mod_autoindex.so
#LoadModule brotli_module modules/mod_brotli.so
#LoadModule buffer_module modules/mod_buffer.so
#LoadModule cache_module modules/mod_cache.so
#LoadModule cache_disk_module modules/mod_cache_disk.so
#LoadModule cache_socache_module modules/mod_cache_socache.so
#LoadModule cern_meta_module modules/mod_cern_meta.so
LoadModule cgi_module modules/mod_cgi.so
#LoadModule charset_lite_module modules/mod_charset_lite.so
#LoadModule data_module modules/mod_data.so
#LoadModule dav_module modules/mod_dav.so
#LoadModule dav_fs_module modules/mod_dav_fs.so
#LoadModule dav_lock_module modules/mod_dav_lock.so
#LoadModule dbd_module modules/mod_dbd.so
#LoadModule deflate_module modules/mod_deflate.so
LoadModule dir_module modules/mod_dir.so
#LoadModule dumpio_module modules/mod_dumpio.so
LoadModule env_module modules/mod_env.so
#LoadModule expires_module modules/mod_expires.so
#LoadModule ext_filter_module modules/mod_ext_filter.so
#LoadModule file_cache_module modules/mod_file_cache.so
#LoadModule filter_module modules/mod_filter.so
#LoadModule http2_module modules/mod_http2.so
LoadModule headers_module modules/mod_headers.so
#LoadModule heartbeat_module modules/mod_heartbeat.so
#LoadModule heartmonitor_module modules/mod_heartmonitor.so
#LoadModule ident_module modules/mod_ident.so
#LoadModule imagemap_module modules/mod_imagemap.so
LoadModule include_module modules/mod_include.so
#LoadModule info_module modules/mod_info.so
LoadModule isapi_module modules/mod_isapi.so
#LoadModule lbmethod_bybusyness_module modules/mod_lbmethod_bybusyness.so
LoadModule lbmethod_byrequests_module modules/mod_lbmethod_byrequests.so
#LoadModule lbmethod_bytraffic_module modules/mod_lbmethod_bytraffic.so
#LoadModule lbmethod_heartbeat_module modules/mod_lbmethod_heartbeat.so
#LoadModule ldap_module modules/mod_ldap.so
#LoadModule logio_module modules/mod_logio.so
LoadModule log_config_module modules/mod_log_config.so
#LoadModule log_debug_module modules/mod_log_debug.so
#LoadModule log_forensic_module modules/mod_log_forensic.so

```

```

#LoadModule lua_module modules/mod_lua.so
#LoadModule macro_module modules/mod_macro.so
LoadModule mime_module modules/mod_mime.so
#LoadModule mime_magic_module modules/mod_mime_magic.so
LoadModule negotiation_module modules/mod_negotiation.so
LoadModule proxy_module modules/mod_proxy.so
#LoadModule proxy_ajp_module modules/mod_proxy_ajp.so
LoadModule proxy_balancer_module modules/mod_proxy_balancer.so
#LoadModule proxy_connect_module modules/mod_proxy_connect.so
#LoadModule proxy_express_module modules/mod_proxy_express.so
#LoadModule proxy_fcgi_module modules/mod_proxy_fcgi.so
#LoadModule proxy_ftp_module modules/mod_proxy_ftp.so
#LoadModule proxy_hcheck_module modules/mod_proxy_hcheck.so
#LoadModule proxy_html_module modules/mod_proxy_html.so
LoadModule proxy_http_module modules/mod_proxy_http.so
#LoadModule proxy_http2_module modules/mod_proxy_http2.so
#LoadModule proxy_scgi_module modules/mod_proxy_scgi.so
#LoadModule proxy_wstunnel_module modules/mod_proxy_wstunnel.so
#LoadModule ratelimit_module modules/mod_ratelimit.so
#LoadModule reflector_module modules/mod_reflector.so
#LoadModule remoteip_module modules/mod_remoteip.so
#LoadModule request_module modules/mod_request.so
#LoadModule reqtimeout_module modules/mod_reqtimeout.so
#LoadModule rewrite_module modules/mod_rewrite.so
#LoadModule sed_module modules/mod_sed.so
#LoadModule session_module modules/mod_session.so
#LoadModule session_cookie_module modules/mod_session_cookie.so
#LoadModule session_crypto_module modules/mod_session_crypto.so
#LoadModule session_dbd_module modules/mod_session_dbd.so
LoadModule setenvif_module modules/mod_setenvif.so
#LoadModule slotmem_plain_module modules/mod_slotmem_plain.so
LoadModule slotmem_shm_module modules/mod_slotmem_shm.so
#LoadModule socache_dbm_module modules/mod_socache_dbm.so
#LoadModule socache_memcache_module modules/mod_socache_memcache.so
LoadModule socache_shmcb_module modules/mod_socache_shmcb.so
#LoadModule spelling_module modules/mod_spelling.so
LoadModule ssl_module modules/mod_ssl.so
#LoadModule status_module modules/mod_status.so
#LoadModule substitute_module modules/mod_substitute.so
#LoadModule unique_id_module modules/mod_unique_id.so
#LoadModule userdir_module modules/mod_userdir.so
#LoadModule usertrack_module modules/mod_usertrack.so
#LoadModule version_module modules/mod_version.so
#LoadModule vhost_alias_module modules/mod_vhost_alias.so
#LoadModule watchdog_module modules/mod_watchdog.so
#LoadModule xml2enc_module modules/mod_xml2enc.so

<IfModule unixd_module>
#
If you wish httpd to run as a different user or group, you must run
httpd as root initially and it will switch.
#
User/Group: The name (or #number) of the user/group to run httpd as.
It is usually good practice to create a dedicated user and group for
running httpd, as with most system services.
#
User daemon
Group daemon

</IfModule>

'Main' server configuration
#
The directives in this section set up the values used by the 'main'
server, which responds to any requests that aren't handled by a
<VirtualHost> definition. These values also provide defaults for
any <VirtualHost> containers you may define later in the file.
#
All of these directives may appear inside <VirtualHost> containers,
in which case these default settings will be overridden for the

```

```

virtual host being defined.
#

#
ServerAdmin: Your address, where problems with the server should be
e-mailed. This address appears on some server-generated pages, such
as error documents. e.g. admin@your-domain.com
#
ServerAdmin admin@example.com

#
ServerName gives the name and port that the server uses to identify itself.
This can often be determined automatically, but we recommend you specify
it explicitly to prevent problems during startup.
#
If your host doesn't have a registered DNS name, enter its IP address here.
#
ServerName MZAD

#
Deny access to the entirety of your server's filesystem. You must
explicitly permit access to web content directories in other
<Directory> blocks below.
#
<Directory />
 AllowOverride none
 Require all denied
</Directory>

#
Note that from this point forward you must specifically allow
particular features to be enabled - so if something's not working as
you might expect, make sure that you have specifically enabled it
below.
#

#
DocumentRoot: The directory out of which you will serve your
documents. By default, all requests are taken from this directory, but
symbolic links and aliases may be used to point to other locations.
#
DocumentRoot "${SRVROOT}/htdocs"
<Directory "${SRVROOT}/htdocs">
 #
 # Possible values for the Options directive are "None", "All",
 # or any combination of:
 # Indexes Includes FollowSymLinks SymLinksifOwnerMatch ExecCGI MultiViews
 #
 # Note that "MultiViews" must be named *explicitly* --- "Options All"
 # doesn't give it to you.
 #
 # The Options directive is both complicated and important. Please see
 # http://httpd.apache.org/docs/2.4/mod/core.html#options
 # for more information.
 #
 Options Indexes FollowSymLinks

 #
 # AllowOverride controls what directives may be placed in .htaccess files.
 # It can be "All", "None", or any combination of the keywords:
 # AllowOverride FileInfo AuthConfig Limit
 #
 AllowOverride None

 #
 # Controls who can get stuff from this server.
 #
 Require all granted
</Directory>

```

```

#
DirectoryIndex: sets the file that Apache will serve if a directory
is requested.
#
<IfModule dir_module>
 DirectoryIndex index.html
</IfModule>

#
The following lines prevent .htaccess and .htpasswd files from being
viewed by Web clients.
#
<Files ".ht*">
 Require all denied
</Files>

#
ErrorLog: The location of the error log file.
If you do not specify an ErrorLog directive within a <VirtualHost>
container, error messages relating to that virtual host will be
logged here. If you *do* define an error logfile for a <VirtualHost>
container, that host's errors will be logged there and not here.
#
ErrorLog "logs/error.log"

#
LogLevel: Control the number of messages logged to the error_log.
Possible values include: debug, info, notice, warn, error, crit,
alert, emerg.
#
LogLevel warn

<IfModule log_config_module>
#
The following directives define some format nicknames for use with
a CustomLog directive (see below).
#
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\"" combined
LogFormat "%h %l %u %t \"%r\" %>s %b" common

<IfModule logio_module>
You need to enable mod_logio.c to use %I and %O
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\" %I %O"
combinedio
</IfModule>

#
The location and format of the access logfile (Common Logfile Format).
If you do not define any access logfiles within a <VirtualHost>
container, they will be logged here. Contrariwise, if you *do*
define per-<VirtualHost> access logfiles, transactions will be
logged therein and *not* in this file.
#
CustomLog "logs/access.log" common

#
If you prefer a logfile with access, agent, and referer information
(Combined Logfile Format) you can use the following directive.
#
#CustomLog "logs/access.log" combined
</IfModule>

<IfModule alias_module>
#
Redirect: Allows you to tell clients about documents that used to
exist in your server's namespace, but do not anymore. The client
will make a new request for the document at its new location.
Example:
Redirect permanent /foo http://www.example.com/bar

```



```

#
Alias: Maps web paths into filesystem paths and is used to
access content that does not live under the DocumentRoot.
Example:
Alias /webpath /full/filesystem/path
#
If you include a trailing / on /webpath then the server will
require it to be present in the URL. You will also likely
need to provide a <Directory> section to allow access to
the filesystem path.

#
ScriptAlias: This controls which directories contain server scripts.
ScriptAliases are essentially the same as Aliases, except that
documents in the target directory are treated as applications and
run by the server when requested rather than as documents sent to the
client. The same rules about trailing "/" apply to ScriptAlias
directives as to Alias.
#
ScriptAlias /cgi-bin/ "${SRVROOT}/cgi-bin/"

</IfModule>

<IfModule cgid_module>
#
ScriptSock: On threaded servers, designate the path to the UNIX
socket used to communicate with the CGI daemon of mod_cgid.
#
#Scriptsock cgisock
</IfModule>

#
"${SRVROOT}/cgi-bin" should be changed to whatever your ScriptAliased
CGI directory exists, if you have that configured.
#
<Directory "${SRVROOT}/cgi-bin">
 AllowOverride None
 Options None
 Require all granted
</Directory>

<IfModule headers_module>
#
Avoid passing HTTP_PROXY environment to CGI's on this or any proxied
backend servers which have lingering "httproxy" defects.
'Proxy' request header is undefined by the IETF, not listed by IANA
#
 RequestHeader unset Proxy early
</IfModule>

<IfModule mime_module>
#
TypesConfig points to the file containing the list of mappings from
filename extension to MIME-type.
#
TypesConfig conf/mime.types

#
AddType allows you to add to or override the MIME configuration
file specified in TypesConfig for specific file types.
#
#AddType application/x-gzip .tgz
#
AddEncoding allows you to have certain browsers uncompress
information on the fly. Note: Not all browsers support this.
#
#AddEncoding x-compress .Z
#AddEncoding x-gzip .gz .tgz
#
If the AddEncoding directives above are commented-out, then you

```

```

probably should define those extensions to indicate media types:
#
AddType application/x-compress .Z
AddType application/x-gzip .gz .tgz

#
AddHandler allows you to map certain file extensions to "handlers":
actions unrelated to filetype. These can be either built into the server
or added with the Action directive (see below)
#
To use CGI scripts outside of ScriptAliased directories:
(You will also need to add "ExecCGI" to the "Options" directive.)
#
#AddHandler cgi-script .cgi

For type maps (negotiated resources):
#AddHandler type-map var

#
Filters allow you to process content before it is sent to the client.
#
To parse .shtml files for server-side includes (SSI):
(You will also need to add "Includes" to the "Options" directive.)
#
#AddType text/html .shtml
#AddOutputFilter INCLUDES .shtml
</IfModule>

#
The mod_mime_magic module allows the server to use various hints from the
contents of the file itself to determine its type. The MIMEMagicFile
directive tells the module where the hint definitions are located.
#
#MIMEMagicFile conf/magic

#
Customizable error responses come in three flavors:
1) plain text 2) local redirects 3) external redirects
#
Some examples:
#ErrorDocument 500 "The server made a boo boo."
#ErrorDocument 404 /missing.html
#ErrorDocument 404 "/cgi-bin/missing_handler.pl"
#ErrorDocument 402 http://www.example.com/subscription_info.html
#

#
MaxRanges: Maximum number of Ranges in a request before
returning the entire resource, or one of the special
values 'default', 'none' or 'unlimited'.
Default setting is to accept 200 Ranges.
#MaxRanges unlimited

#
EnableMMAP and EnableSendfile: On systems that support it,
memory-mapping or the sendfile syscall may be used to deliver
files. This usually improves server performance, but must
be turned off when serving from networked-mounted
filesystems or if support for these functions is otherwise
broken on your system.
Defaults: EnableMMAP On, EnableSendfile Off
#
#EnableMMAP off
#EnableSendfile on

Supplemental configuration
#
The configuration files in the conf/extra/ directory can be
included to add extra features or to modify the default configuration of
the server, or you may simply copy their contents here and change as

```

```

necessary.

Server-pool management (MPM specific)
#Include conf/extra/httpd-mpm.conf

Multi-language error messages
#Include conf/extra/httpd-multilang-errordoc.conf

Fancy directory listings
#Include conf/extra/httpd-autoindex.conf

Language settings
#Include conf/extra/httpd-languages.conf

User home directories
#Include conf/extra/httpd-userdir.conf

Real-time info on requests and configuration
#Include conf/extra/httpd-info.conf

Virtual hosts
#Include conf/extra/httpd-vhosts.conf

Local access to the Apache HTTP Server Manual
#Include conf/extra/httpd-manual.conf

Distributed authoring and versioning (WebDAV)
#Include conf/extra/httpd-dav.conf

Various default settings
#Include conf/extra/httpd-default.conf

Configure mod_proxy_html to understand HTML4/XHTML1
<IfModule proxy_html_module>
Include conf/extra/proxy-html.conf
</IfModule>

Secure (SSL/TLS) connections
#Include conf/extra/httpd-ssl.conf
#
Note: The following must must be present to support
starting without SSL on platforms with no /dev/random equivalent
but a statically compiled-in mod_ssl.
#
<IfModule ssl_module>
SSLRandomSeed startup builtin
SSLRandomSeed connect builtin
</IfModule>

#####
Added by Mike - include the bits you need
#####
#include conf/mzSage-ssl-RP.conf
include conf/mzSage-ssl-LBR.conf
#####
END
#####

```

## mzSage-ssl-LBR.conf

```
#####
Configure Apache as a SSL Load Balancer
#####
##
Beginning of block that may already be defined elsewhere
SSLCipherSuite HIGH:MEDIUM:!MD5:!RC4
SSLProxyCipherSuite HIGH:MEDIUM:!MD5:!RC4
SSLHonorCipherOrder on
SSLProtocol all -SSLv3
SSLPassPhraseDialog builtin
SSLSessionCache "shmcb:${SRVROOT}/logs/ssl_cache(512000)"
SSLSessionCacheTimeout 300
End of block that may already be defined elsewhere
##
Listen 443
<VirtualHost *:443>
 DocumentRoot "${SRVROOT}"
 ServerName MZAD
 ServerAdmin admin@example.com
 ErrorLog "logs\LBR_ssl_error.log"
 TransferLog "logs\LBR_ssl_access.log"
 SSLEngine on
 SSLCertificateFile "D:/SageSupport/mzcertificates/SyracuseTLS/certs/wildcard.crt"
 SSLCertificateKeyFile "D:/SageSupport/mzcertificates/SyracuseTLS/certs/wildcard.key"
 SSLCACertificateFile "D:/SageSupport/mzcertificates/SyracuseTLS/certs/TestInterCA.crt"
 <FilesMatch "\.(cgi|shtml|phtml|php)$">
 SSLOptions +StdEnvVars
 </FilesMatch>
 <Directory "${SRVROOT}/cgi-bin">
 SSLOptions +StdEnvVars
 </Directory>
 BrowserMatch "MSIE [2-5]" \
 nokeepalive ssl-unclean-shutdown \
 downgrade-1.0 force-response-1.0
 CustomLog "logs\LBR_ssl_request.log" "%h %l %u %t %{SSL_PROTOCOL}x %{SSL_CIPHER}x \"%r\"
%>s %b %T %D"
 ### add in the proxy
 SSLProxyProtocol all -SSLv3
 ProxyRequests on
 ProxyErrorOverride On
 ProxyPreserveHost On
 SSLProxyEngine On
 # Need the CA certificate for the backend server(s)
 SSLProxyCACertificateFile
"D:/SageSupport/mzcertificates/SyracuseTLS/certs/TestInterCA.crt"
 ##### Quick hack (if needed) for dealing with invalid SSL Certs on the backend
server(s)
 ##### ONLY EVER DO THIS FOR A TEST INSTANCE!!
 SSLProxyCheckPeerName off
 SSLProxyCheckPeerExpire off
 SSLProxyVerify none
 ##### End of quick hack
 Header add Set-Cookie "ROUTEID=session.%(BALANCER_WORKER_ROUTE)e; path=/"
env=BALANCER_ROUTE_CHANGED
 <Proxy "balancer://myLbr">
 Require all granted
 BalancerMember "https://mzweb1" route=MZWEB1
 BalancerMember "https://mzweb2" route=MZWEB2
 BalancerMember "https://mzweb3" route=MZWEB3
 ProxySet lbmethod=byrequests stickysession=ROUTEID
 </Proxy>
 <Location "/" >
 ## Retain SSL traffic through to backend server
 ProxyPass "balancer://myLbr/"
 ProxyPassReverse "balancer://myLbr/"
 </Location>
</VirtualHost>
#####
```