

# Test system Build Diary

2021 R3 (V12 patch 27) upgrade to 2021 R4 (Patch 28)

## 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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## Contents

Introduction .....	3
2021 R3 – upgrade to 2021 R4 build diary.....	4
Objective .....	4
Starting architecture and notes .....	4
Documentation to use for planning and execution of this task .....	6
Initial steps.....	7
Steps to take .....	9
Conclusion.....	25

## 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 upgrading a 2021 R3 multi-node instance to 2021 R4

## 2021 R3 – upgrade to 2021 R4 build diary

### Objective

I want to upgrade my existing multi-node 2021 R3 instance to the latest 2021 R4 patch, including all recommended technology stack updates

### Starting architecture and notes

#### **MAIN server (X3ERP12VM) Windows Server 2016 Standard**

- Syracuse 12.12.0.51-0
- MongoDB 4.2.12
  - Plus arbitor
- X3 Patch 27 (2021 R3)
- X3 Application
- X3 Runtime/AdxAdmin 93.3.45
- X3 Console CFG.2.51.0.17
- X3 Print Server EDT 2.24.0.15
- Elastic Search 7.9.3
- X3 services 8.0.55
- ATP 2.1.2
- Apache 2.4
- SQL Server Management Studio 2017
- Microsoft SQL Server 2017
- OpenJDK 1.8.0\_252

#### **SECOND server (X3SECOND) Windows Server 2016 Standard**

- Syracuse
- MongoDB
- Additional X3 Runtime/AdxAdmin
- SQL Server Management Studio 2017
- OpenJDK 1.8.0\_252

These two servers are configured as Syracuse cluster, MongoDB Cluster and Application Cluster

#### **Multiple X3 folders**

- SEED
  - History (archive) folder
- PU9MIG (originally migrated from PU9 SEED folder)
- LIVE (BRI only, newly created folder)

## Summary of steps to take to upgrade 2021 R3 to 2021 R4

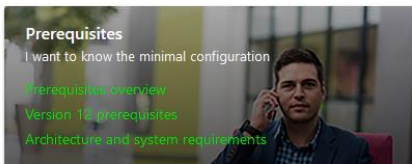
- Perform source system audit to confirm versions
- Check pre-requisites
- Do initial checks and any tuning needed
- Apply main Technology component patches
  - X3 Console 2.52.0
  - Adxadmin 94.1.19
  - Runtime 94.1.19
  - Syracuse 12.13.0
- Use X3 console to reconfigure classic components
- Apply X3 patch 28
- Upgrade HSEED history folder
- Apply additional Technology patches
  - X3 Services 11.0.43
  - Elasticsearch 7.13
- Take backup
- Perform post patch testing

Documentation to use for planning and execution of this task

Sage Online documentation

## Before you start

Make sure your configuration is compatible



Overall V12 documentation

<http://online-help.sageerpx3.com/erp/12/public/index.html>

Pre-requisites

[http://online-help.sageerpx3.com/erp/12/public/Prerequisites-\(Last-version\).html](http://online-help.sageerpx3.com/erp/12/public/Prerequisites-(Last-version).html)

[http://online-help.sageerpx3.com/erp/12/public/prerequisites\\_overview.html](http://online-help.sageerpx3.com/erp/12/public/prerequisites_overview.html)

Installation documentation

[http://online-help.sageerpx3.com/erp/12/public/getting-started\\_sage-erp-x3-installation-procedure.html](http://online-help.sageerpx3.com/erp/12/public/getting-started_sage-erp-x3-installation-procedure.html)

Sage X3 Services installation

[https://online-help.sageerpx3.com/erp/12/public/getting-started\\_Sage-X3-Services-installation.html](https://online-help.sageerpx3.com/erp/12/public/getting-started_Sage-X3-Services-installation.html)

Sage Knowledgebase articles or Blogs

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

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

Additional notes when upgrading Elasticsearch

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

Understanding and troubleshooting Sage X3 "Updates" patching mechanism

<https://www.sagecity.com/gb/sage-x3-uk/b/sage-x3-uk-support-insights/posts/understanding-and-troubleshooting-sage-x3-updates-patching-mechanism>

Diagnosing "New ADC" (Automated Data Collection) issues (aka X3Services)

<https://support.na.sage.com/selfservice/viewdocument.do?externalId=112947>

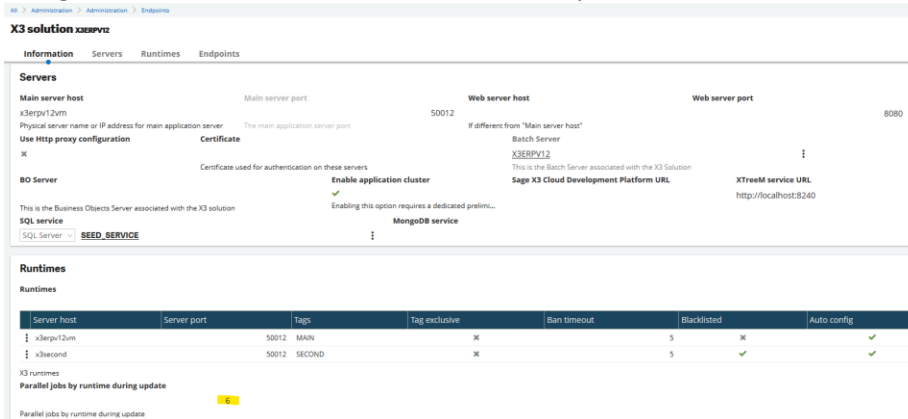
## Initial steps

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

Copy over latest Sage Support "Investigation Scripts"

## Check solution for "Parallel jobs by runtime during update"

Navigate to Administration, Administration, Endpoints, X3 solutions



The screenshot shows the 'X3 solution x3s0rvz' administration page. The 'Servers' section includes fields for 'Main server host' (x3erpv12vm), 'Main server port' (50012), and 'Web server host' (x3erpv12). Below this are sections for 'BO Server', 'SQL service', and 'MongoDB service'. The 'Runtimes' section contains a table with the following data:

Server host	Server port	Tags	Tag exclusive	Run timeout	Blacklisted	Auto config
x3erpv12vm	50012	MAIN	X	5	X	✓
x3lsecond	50012	SECOND	X	5	✓	✓

Below the table, there is a section for 'X3 runtimes' with a parameter 'Parallel jobs by runtime during update' highlighted in yellow.

Indicates the number of jobs that can run in parallel during the update process. The 0 default value indicates that there is no limitation.

## Check LAUNCHSYNC parameter

For all the folders, (X3, SEED, LIVE and PU9 in my case), navigate to Parameters, General Parameters, Parameter values

Select SUP (Supervisor), PRF (Performances) and select "Detail"

Check LAUNCHSYNC parameter is set to "No", change if required. As per online help ( <https://online-help.sageerpx3.com/erp/12/staticpost/sync-launch-after-patch-integration> ) *If set to No, the validation of windows is performed "on the fly", when the given window is used for the first time.* NOTE: some mandatory validation is still performed regardless of this setting, such as when messages/menus are updated

Notice the MAXUPDTRS parameter ( <https://online-help.sageerpx3.com/erp/12/staticpost/sync-launch-after-patch-integration/> ) is set to 50000 by default, but could potentially be considered to change this for the purpose of improving performance for this patching activity

sage X3

Parameter values

Expand all

- ▶ AAS Fixed assets
- ▶ ACH Purchasing
- ▶ ADX Adonix
- ▶ BUD Budgets
- ▶ CPT Accounting
- ▶ CRM CRM activity
- ▶ EXAPP Applications externes
- ▶ GDD Budgets opérationnels
- ▶ GPA Manufacturing
- ▶ HDK Customer support
- ▶ LOC Localisations
- ▶ PAY Paie-X3P
- ▶ STO Stocks
- ▶ SUP Supervisor
  - Folder
  - SEED
  - Legislation

All > Parameters > General parameters

### Parameter values ?

Module:  Legislation:  Company:  Site:

Supervisor:

Group:

Performances

	Parameter	Description	Value
1	AUZMEMO	Create all memos	Yes
2	CLOMAX	Max Nbr	0
3	LAUNCHSYN	Sync launch after patch integr	No
4	MAXSPEACV	Specific ACV limit	300
5	MAXUPDTRS	Update transaction limit	50000



## Steps to take

### Preamble

- Shutdown batch server
- Shutdown SOAP pools
- Shutdown Print Server service
- Shutdown Syracuse service (Both servers)

Check all node.exe and adonix.exe processes have disappeared from both servers

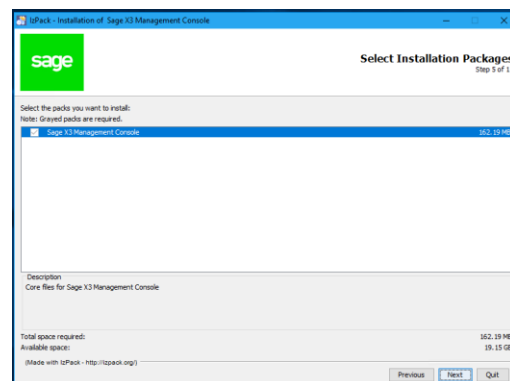
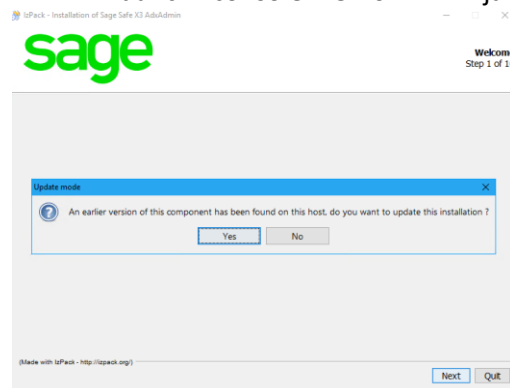
- Shutdown Runtime service (Both servers)
- Shutdown AdxAdmin service (Both servers)
- Shutdown Jenkins service (SECOND)
- Shutdown X3 Services service (MAIN)
- Shutdown Elastic Search service (MAIN)
- Take “mongodump” backup of MongoDB

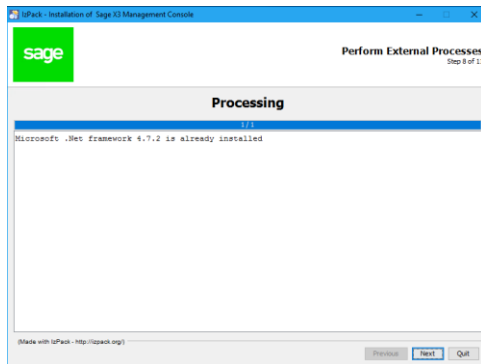
### Apply main Technology component patches

- X3 Console 2.52.0 (MAIN)
- Adxadmin 94.1.19 (MAIN,SECOND)
- Runtime 94.1.19 (MAIN, SECOND)
- Syracuse 12.13.0 (MAIN, SECOND)

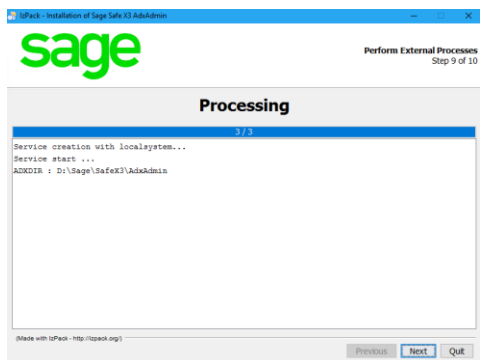
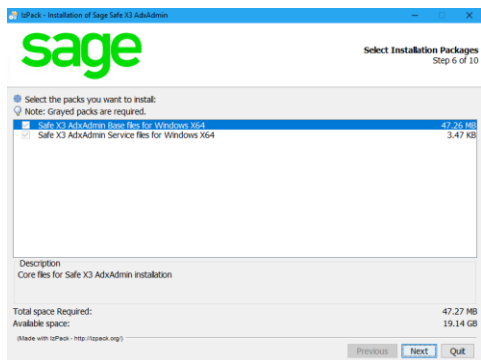
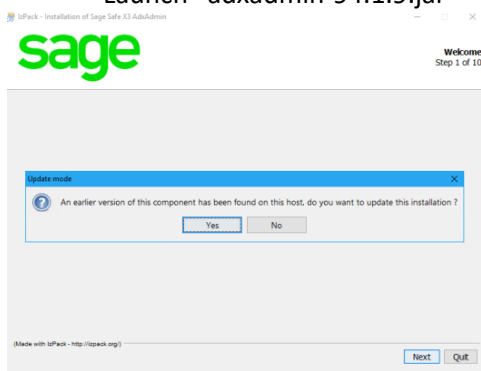
### Apply X3 Console (MAIN)

Launch “console-2.52.0.14-win.jar”

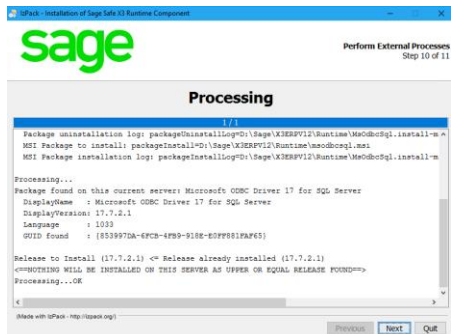
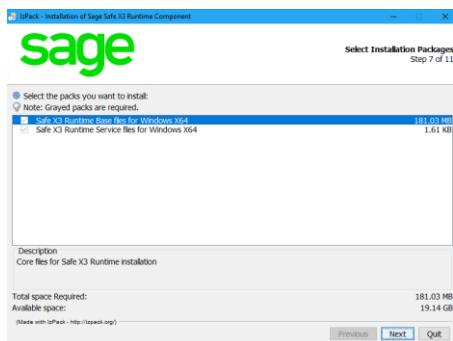
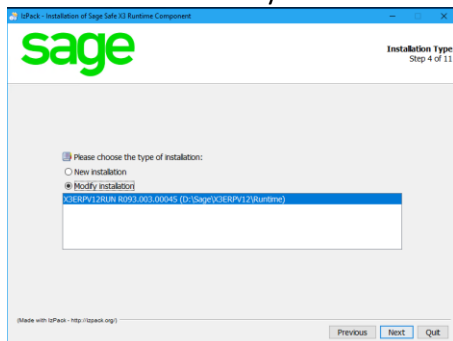




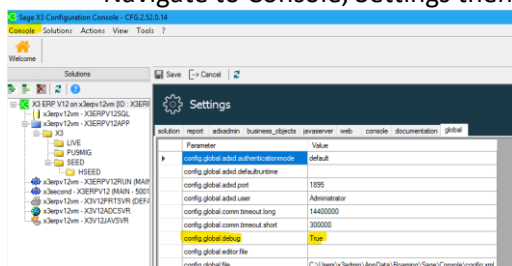
Apply AdxAdmin (MAIN, SECOND)  
Launch "adxadmin-94.1.9.jar"



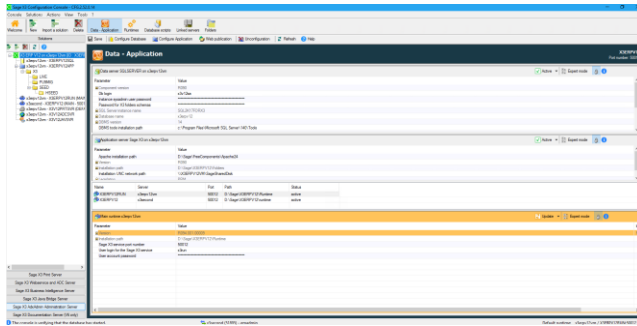
Apply Runtime (MAIN, SECOND)  
 Launch “runtime-94.1.9.jar”  
 Select “Modify installation”



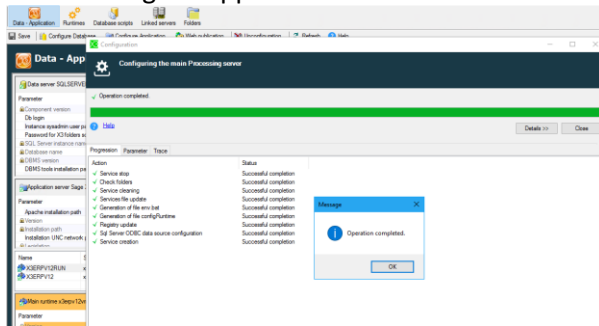
Launch X3 console on MAIN and reconfigure Runtime servers  
 Check the “debug” is enabled, change if needed  
 Navigate to Console, Settings then select the “global” tab



If not already set to “True” change the setting then restart the X3 Console for the change to take effect



Click “Configure Application”

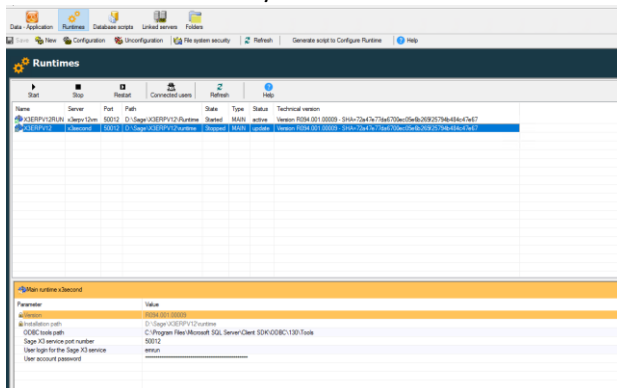


Check the “Trace” tab

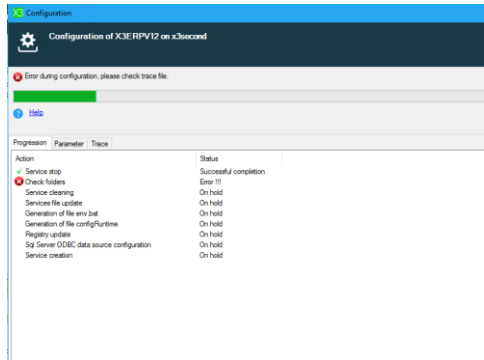


Click the “Runtimes” button

Select the “X3ERP12/x3second” line



Click “Configuration” button  
Get error

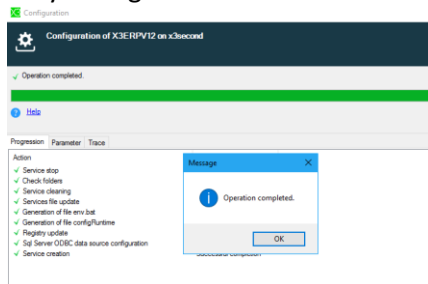


The trace shows the detail

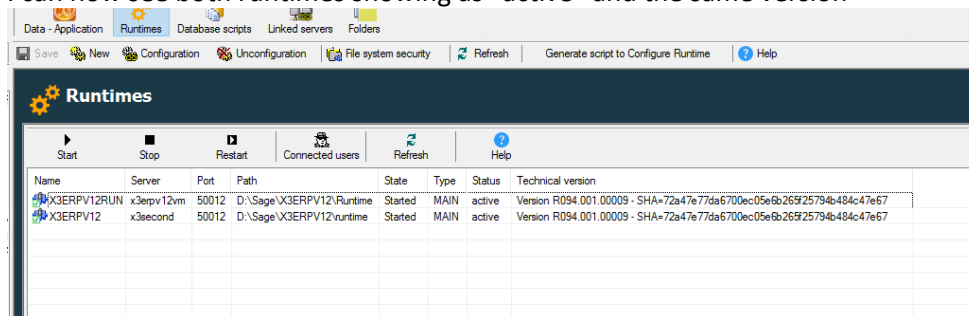


Also check the “gtrace.tra” file located in “C:\Users\x3admin\AppData\Roaming\Sage\Console\traces”

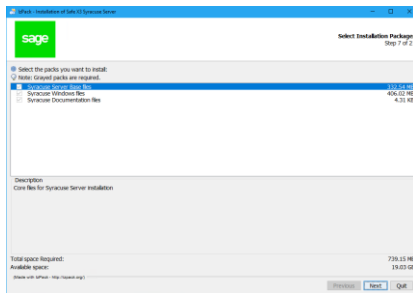
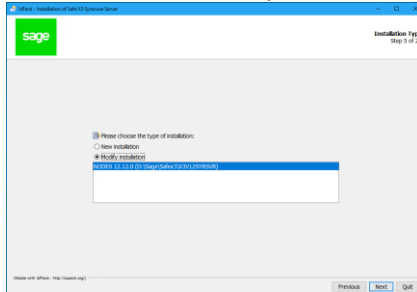
Manually deleted the existing Symbolic link “D:\Sage\X3ERP\12\Folders” then restart the configuration. This worked OK. NOTE: this problem is resolved in X3 Console 2.53.x but for now the workaround is easy enough.



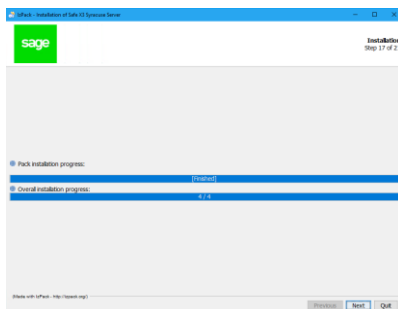
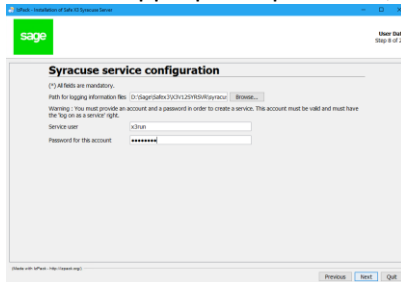
I can now see both runtimes showing as “active” and the same version

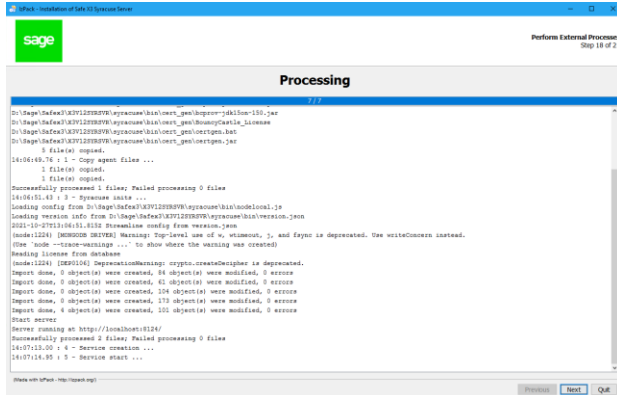


Apply SyracuseServer (MAIN, SECOND)  
Launch "syracuse-server-12.13.0.31.jar"  
Select "Modify installation"

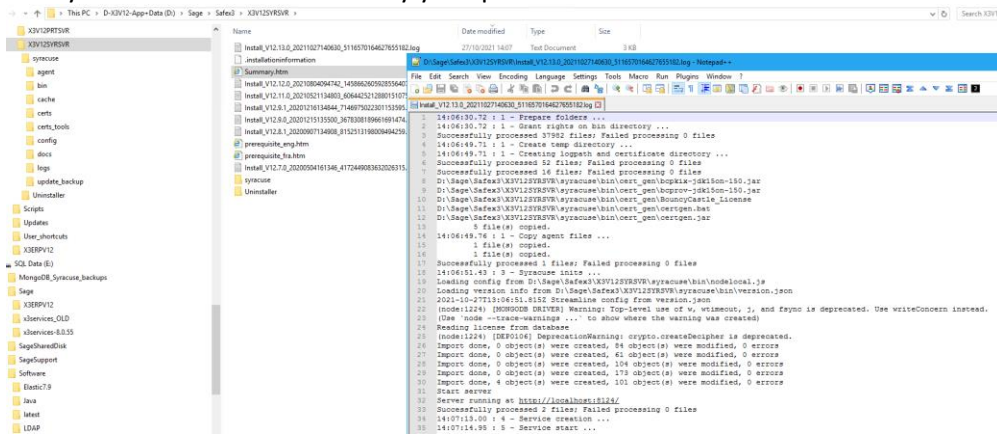


Enter the appropriate password, then click "Next"





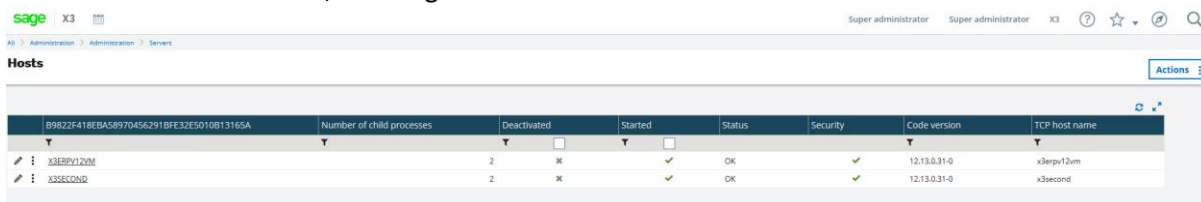
Make sure no errors are listed. These messages are also written to the Syracuse installer log located in the Syracuse base install directory you specified



### Check Windows Task Manager to confirm Syracuse “Node.exe” processes are started OK

Process Name	PID	Status	Session	Working Set	Private Bytes	Working Set - Private Bytes	Working Set - Private Bytes	Working Set - Private Bytes	Working Set - Private Bytes	Working Set - Private Bytes
node.exe	2540	Running	x2run	00	127,936 K	D:\Sage\Sage3\X3V12SVRSVR\syrcase\bin\win32_x64\node.exe - N1 500 ***				
node.exe	1672	Running	x2run	00	128,188 K	D:\Sage\Sage3\X3V12SVRSVR\syrcase\bin\win32_x64\node.exe - W0 500 ***				
node.exe	1436	Running	x2run	00	147,104 K	D:\Sage\Sage3\X3V12SVRSVR\syrcase\bin\win32_x64\node.exe - N0 500 ***				
node.exe	2564	Running	SYSTEM	00	6,760 K	D:\Sage\Sage3\X3V12SVRSVR\syrcase\agent\node.exe syrcagent.js				
node.exe	5448	Running	x2run	00	60,748 K	D:\Sage\Sage3\X3V12SVRSVR\syrcase\bin\win32_x64\node.exe nanny.js				

Login to the front end and check Administration, Administration, Servers, Hosts to confirm both servers are started, showing with “OK” status and are the same version



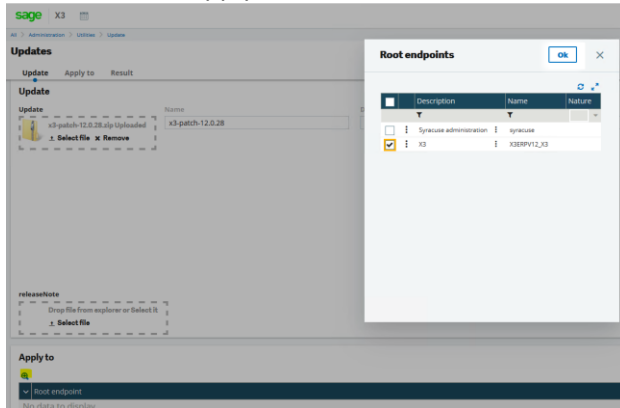
## Apply X3 patch 28

Navigate to Administration, Utilities, Update, Updates

Select "New update"

Select file "x3-patch-12.0.28.zip"

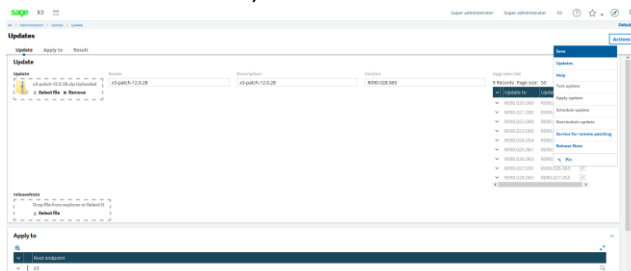
In the "apply to" add "X3"



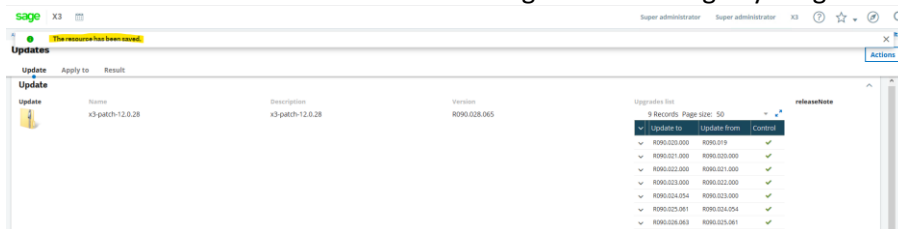
Check the folders appear as expected



Click Actions, Save



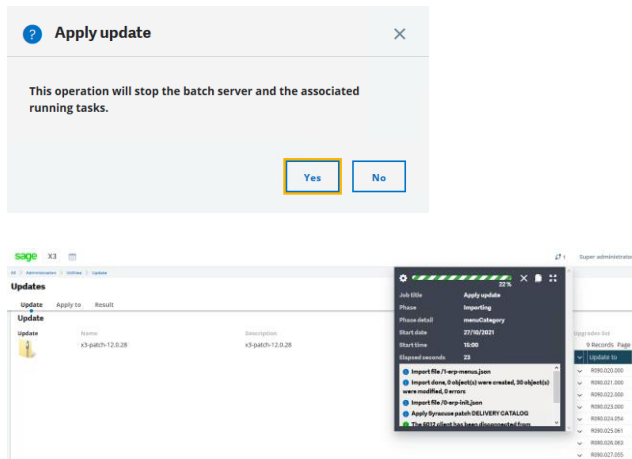
**\*\* WARNING: this may take several minutes to complete. You MUST wait until the browser shows the "Resource saved" message before doing anything else!**



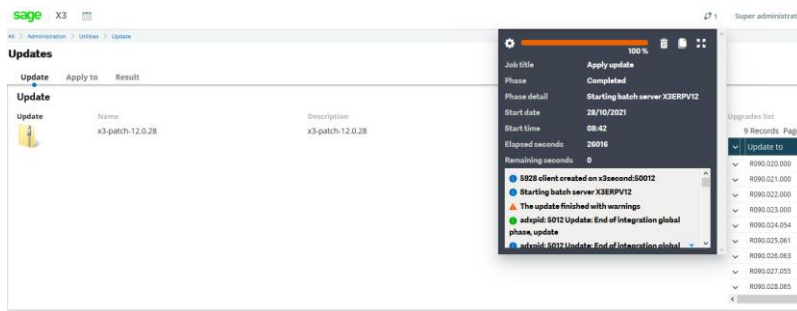
NOTE: taking a backup at this point would be prudent, particularly for the first test attempt

Select Actions, "Apply update" to execute the patch

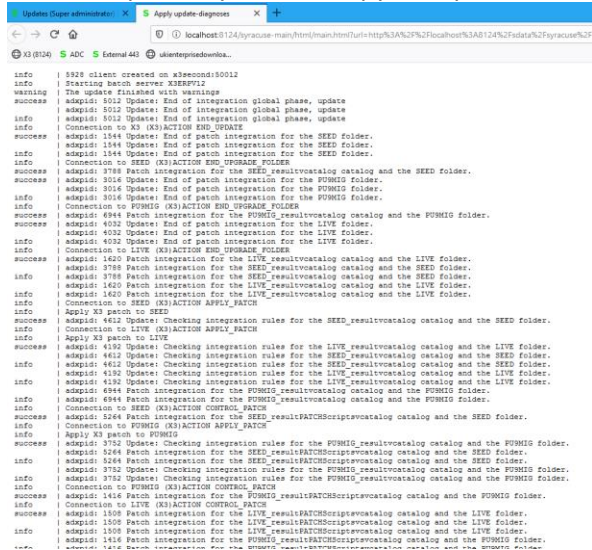




\*Took about 1 hour 10 mins to complete the X3 folder, plus another 6 hours to finish all child folders



Once completed, you can “Copy to clipboard” to save the messages shown for later review



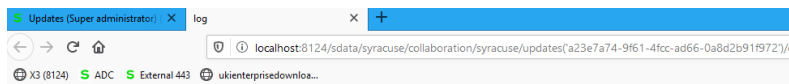
You can download the log files in the update record, as well as checking the status

Apply to

Root endpoint

Folders to update

Name	Parent	Legislations	Version	Updated	Maintenance	Integration	Generation	Status	Detailed status	Log
X3		ANG,ARE,AUS,AUT,BEL,BHR,BRI,CHI,FRA,GER,ITA,POL,POR,SAU,SPA,SWI,USA,ZAF	90.27.55	04/08/2021		success	success	success		
SEED	X3	ANG,ARE,AUS,AUT,BEL,BHR,BRI,CHI,FRA,GER,ITA,POL,POR,SAU,SPA,SWI,USA,ZAF	90.27.55	04/08/2021		warning	success	warning		
PUSMIG	X3	ANG,AUS,AUT,BEL,BRI,CHI,FRA,GER,ITA,POL,POR,RUS,SPA,SWI,USA,ZAF	90.27.55	04/08/2021		success	success	success		
LIVE	X3	BRI	90.27.55	04/08/2021		warning	success	warning		



## Start upgrade folder SEED

[End of file](#)

```
10-28-2021 10:05:00 : START : Creating a record in the AUPDATE table for the SEED folder.
10-28-2021 10:05:00 : adxpid: 8164
10-28-2021 10:05:00 : adxmac: X3ERP12VM
_AUPDATE_FIRST : creation of file with numseq 27
10-28-2021 10:05:00 : numseq: 27
10-28-2021 10:05:00 : END : Creating a record in the AUPDATE table for the SEED folder.
```

Normal end of log file 10-28-21 10:05:00

End of file

## Control Merged patch R090.028.065

[End of file](#)

```
10-28-2021 10:05:31 : START : Checking integration rules for the SEED_resultPATCHScripts catalog and the SEED folder.
10-28-2021 10:05:31 : adxpid: 5404
10-28-2021 10:05:31 : adxmac: X3SECOND
10-28-2021 10:05:31 : numseq: 27
10-28-2021 10:05:31 : numseq: 27
10-28-2021 10:05:31 : END : Checking integration rules for the SEED_resultPATCHScripts catalog and the SEED folder.
```

Check the logs to confirm what warnings there are. Use Blog article “Understanding and troubleshooting Sage X3 "Updates" patching mechanism” (<https://www.sagecity.com/gb/sage-x3-uk/b/sage-x3-uk-support-insights/posts/understanding-and-troubleshooting-sage-x3-updates-patching-mechanism> ) if needed.

*Update HSEED folder*

Connect to X3 folder

Navigate to Usage, Batch server, Query management

Click “Query” to launch a new job

Enter “VALDOS” task code, then Validation

Pick HSEED folder, then click “OK” to send the job to the batch server

Number	Folder	Task Code	User	Date	Time	One ...	Status	End Ti...	End date	Task Type	Script
1	17426 SEED	ACCBATCH1	BRI ADMIN	03/11/21	14:24	No	Standby		03/11/21	Processing	BATCHCPT
2	17425 LIVE	ACCBATCH1	BRI ADMIN	03/11/21	14:24	No	Standby		03/11/21	Processing	BATCHCPT
3	17424 X3	VALDOS	BRI ADMIN	03/11/21	14:23	No	In progress			Processing	
4	17423 LIVE	ACCBATCH1	BRI ADMIN	03/11/21	14:23	No	Finished	14:23:17	03/11/21	Processing	BATCHCPT
5	17422 SEED	ACCBATCH1	BRI ADMIN	03/11/21	14:23	No	Finished	14:23:18	03/11/21	Processing	BATCHCPT

Monitor the task to ensure it completes successfully

## Apply additional Technology patches

- X3 Services 11.0.43 (MAIN)
- Elasticsearch 7.13 (MAIN)

## Apply X3 services

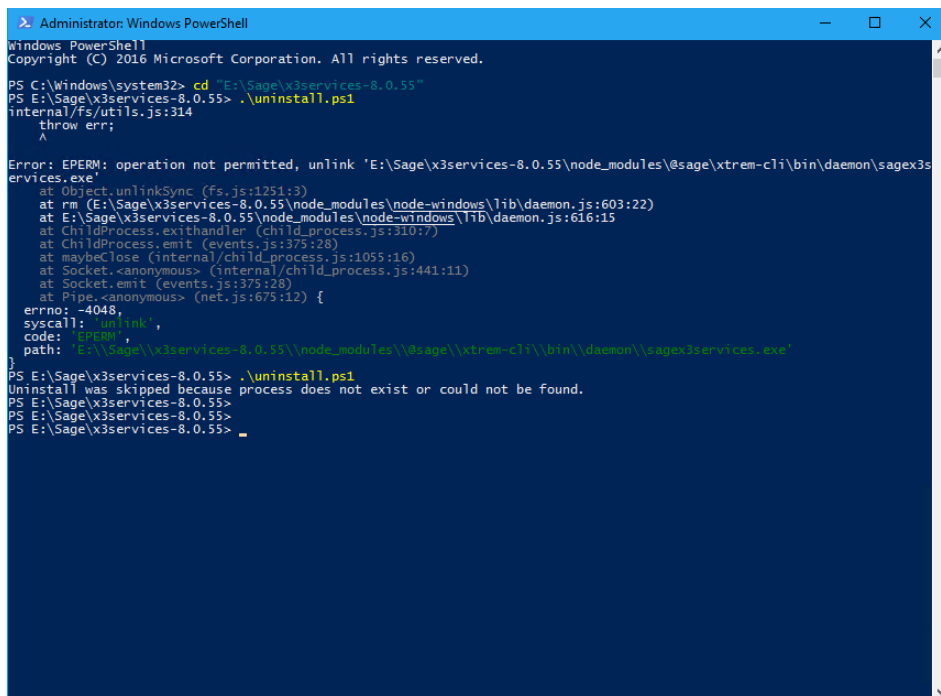
Refer to [https://online-help.sageerpx3.com/erp/12/public/getting-started\\_Sage-X3-Services-installation.html](https://online-help.sageerpx3.com/erp/12/public/getting-started_Sage-X3-Services-installation.html) for full instructions, but in essence you run a script to uninstall the current version, then install the newer version

First check the “X3 Services” service has been stopped

Open a PowerShell prompt with administrator privilege

Enter the following commands:

```
cd "E:\Sage\x3services-8.0.55"
.\uninstall.ps1
```



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Windows\system32> cd "E:\Sage\x3services-8.0.55"
PS E:\Sage\x3services-8.0.55> .\uninstall.ps1
internal/fs/utils.js:314
    throw err;
    ^
Error: EPERM: operation not permitted, unlink 'E:\Sage\x3services-8.0.55\node_modules\@sage\xtrem-cli\bin\daemon\sagex3services.exe'
    at Object.unlinkSync (fs.js:1251:3)
    at rm (E:\Sage\x3services-8.0.55\node_modules\node-windows\lib\daemon.js:603:22)
    at E:\Sage\x3services-8.0.55\node_modules\node-windows\lib\daemon.js:616:15
    at ChildProcess.exithandler (child_process.js:310:7)
    at ChildProcess.emit (events.js:375:28)
    at maybeClose (internal/child_process.js:1055:16)
    at Socket.<anonymous> (internal/child_process.js:441:11)
    at Socket.emit (events.js:375:28)
    at Pipe.<anonymous> (net.js:675:12) {
  errno: -4048,
  syscall: 'unlink',
  code: 'EPERM',
  path: 'E:\Sage\x3services-8.0.55\node_modules\@sage\xtrem-cli\bin\daemon\sagex3services.exe'
}
PS E:\Sage\x3services-8.0.55> .\uninstall.ps1
Uninstall was skipped because process does not exist or could not be found.
PS E:\Sage\x3services-8.0.55>
PS E:\Sage\x3services-8.0.55>
PS E:\Sage\x3services-8.0.55> _
```

I think this issue may have been due to my having the Windows Services application open at the time. Had to manually remove the service using Registry Editor (regedt32) and restart server

Renamed existing installation folder “E:\Sage\x3services-8.0.55” to “E:\Sage\x3services-8.0.55\_OLD”

Extract “x3-services-11.0.43-win.zip” into “E:\Sage” directory

Review old and new versions of “xtrem-security.yml” files and copy over the settings from the old version, in this case the files will be identical

```

1 loginUrl: http://localhost:8124
2
3 # The following clientId and secret must be set with the same values in the syracuse nodelocal.js in the section
4 # Both this file and nodelocal.js must be kept safe with restricted access to admin only.
5 # exports.config = {
6 #   [...]
7 #   etna: {
8 #     security: {
9 #       clientId: "create-your-own-client-id-uuid",
10 #       secret: "change-to-use-a-strong-secret-for-your-client-id"
11 #     }
12 #   }
13 #   [...]
14 # };
15 syracuse:
16   clientId: 12345678-1234-1234-1234-123456789
17   secret: mySecretKeyNooneWillEverDiscover
18

```

Although it should still be OK, also check the nodelocal.js on both Syracuse nodes to confirm the “etna” section is correct

Open a PowerShell prompt with administrator privilege

Enter the following commands:

```

cd "E:\Sage\x3-services-11.0.43-win"
.\install.ps1

```

```

PS C:\Windows\system32> cd "E:\Sage\x3-services-11.0.43-win"
PS E:\Sage\x3-services-11.0.43-win> .\install.ps1
Install complete.
Start complete.
PS E:\Sage\x3-services-11.0.43-win> _

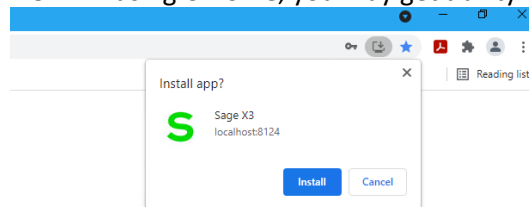
```

### Login to ADC

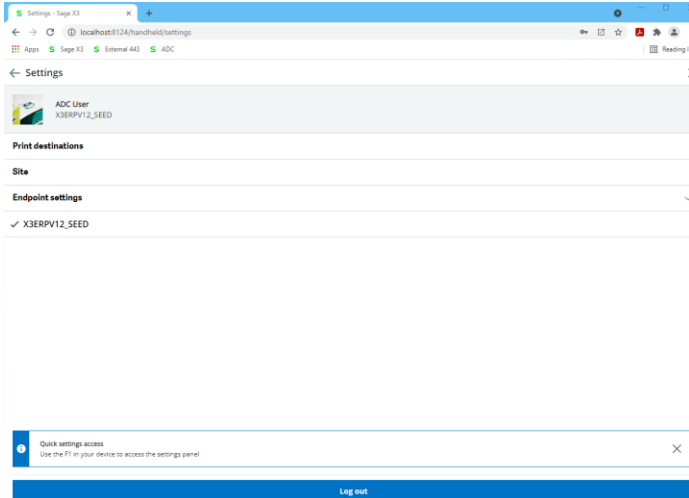
Make sure “Sage X3 Services” service is started

Connect to <http://localhost:8124/handheld/>

NOTE: if using Chrome, you may get ability to install “Sage X3”



Login as existing user “adcuser”, which has been setup and working in previous version



NOTE: If you get any issues, you may find "Diagnosing "New ADC" (Automated Data Collection) issues (aka X3Services)" ( <https://support.na.sage.com/selfservice/viewdocument.do?externalId=112947> ) useful

## Apply Elasticsearch 7.13

Review “Additional notes when upgrading Elasticsearch” (

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

Check Elastic Search documentation

<https://www.elastic.co/guide/en/elasticsearch/reference/7.13/index.html>

<https://www.elastic.co/guide/en/elasticsearch/reference/7.13/release-notes-7.13.4.html>

Download 7.13.4 from <https://www.elastic.co/downloads/elasticsearch> (I always use the ZIP file method, rather than the MSI Windows installer)

Stop Elastic Search service

Uninstall the Elastic Search service (7.9 version in my case)

Launch CMD prompt with “Run as Administrator” option and run the following commands:

```
REM Set the following variables to suit your environment
set "mzNewServiceName=ElasticSearch_7.9"
set "ES_HOME=D:\Sage\elasticsearch-7.9.3"
set "JAVA_HOME=C:\openjdk\jdk-15.0.1"
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%"
cd /d "%ES_HOME%\bin"
elasticsearch-service.bat remove
pause
```

Rename directory “D:\Sage\elasticsearch-7.9.3” to “D:\Sage\elasticsearch-7.9.3\_OLD”

Extract “elasticsearch-7.13.4-windows-x86\_64.zip” to “D:\Sage\elasticsearch-7.13.4”

Install Elastic Search service

Launch CMD prompt with “Run as Administrator” option and run the following commands:

```
REM Set the following variables to suit your environment
set "mzNewServiceName=ElasticSearch_7.13"
set "ES_HOME=D:\Sage\elasticsearch-7.13.4"
set "ES_JAVA_OPTS=-Xms1g -Xmx1g"
REM The following lines should not need to be changed
set "ES_JAVA_HOME=%ES_HOME%\jdk"
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%"
cd /d "%ES_HOME%\bin"
call elasticsearch-service.bat install
```

**NOTE:** I was getting error when first running the elasticsearch-service.bat script

```
Native memory allocation (mmap) failed to map 4240441344 bytes for G1
virtual space
```

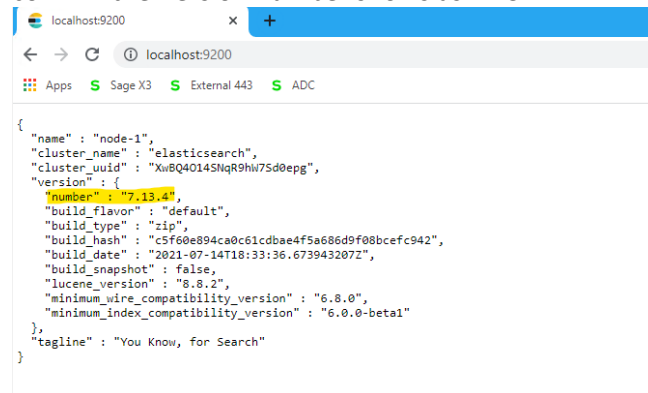
Added the ES\_JAVA\_OPTS in the above commands to overcome this error (Default is 4GB)  
 NOTE2: It is recommended to use ES\_JAVA\_HOME to use the embedded JDK, delivered with ElasticSearch package, as shown above

Edit the %ES\_HOME%\config\elasticsearch.yml file and add the following lines:

```
network.host: 0.0.0.0
node.name: node-1
cluster.initial_master_nodes: ["node-1"]
```

Start the Elastic Search service

In a browser on the Elastic Search Windows Server, navigate to the URL " <http://localhost:9200/> " and confirm the Version number shows as 7.13.4



Run the Elastic Search Index update

Navigate to Administration, Usage, Search Index Management

Perform an Elastic Search search to confirm it is working as expected

## Take backup

It is useful to take another backup before attempting any testing. This also gives an opportunity to restart the Windows Servers, ensuring there are no hidden issues for the next server restart!

## Perform post patch checks

Perform any smoke testing required before then allowing the business users to perform their own testing of all critical business functions.

## Other upgrades to consider (Out of scope for this document)

- ATP 2.5.0
- Eclipse
- Office add-in



## Conclusion

This document shows the steps taken to apply the Technology and X3 patches for 2021 R4 (Patch 28) to a TEST instance previously running 2021 R3 (Patch 27)