Test system Build Diary

2021 R3 (V12 patch 27) Convert a multiple runtime setup to Multi-Main runtime

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 how to convert an existing multiple runtime environment to instead use the Multi-Main runtime setup.

2021 R3 (V12 patch 27) Convert a multiple runtime setup to Multi-Main runtime

Objective

After upgrading my existing X3 multiple runtime system to patch 27, I now want to convert my existing system to use a Multi-Main runtime setup instead. Multi-Main gives better performance and failover stability, so want to take advantage of this new functionality now I have upgraded to a version that supports this feature.

Note that the system architecture will not change, nor will the X3 versions. I am simply changing my runtime servers to use Multi-Main setup.

Starting architecture and notes

Two Windows Server 2016 servers (Server names X3ERPV12VM and X3SECOND)

- Software already loaded:
  - Windows Server 2016
  - 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
- X3 versions
  - X3 Patch 27
  - Syracuse 12.12.0.51-0
  - AdxAdmin/Runtime 93.3.45
  - X3 Console 2.51.0.17

Summary of steps to convert secondary runtime setup to Multi-Main

- Unconfigure and uninstall any secondary runtime servers
- Create and configure all servers to use shared drive for X3 Application folder
- Configure original MAIN runtime server to use shared drive
- Re-install the original secondary runtime servers as MAIN runtimes
- Finalise X3 configuration
- Testing of the system once the tasks is completed

Documentation to use for planning and execution of this task

Sage Online documentation

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_overview.html

Installation documentation
http://online-help.sageerpx3.com/erp/12/public/getting-started_sage-erp-x3-installation-procedure.html

Application Server : https://online-help.sageerpx3.com/erp/12/staticpost/installing-the-application-server/

Console: https://online-help.sageerpx3.com/erp/12/public/configuration-console_console.html

Application cluster: https://online-help.sageerpx3.com/erp/12/wp-static-content/public/Application%20Cluster%20Architecture/Default.htm

Sage Knowledgebase articles or Blogs

Additional notes when installing Application Cluster
https://support.na.sage.com/selfservice/viewdocument.do?externalId=109651

Which firewall ports need to be open in a multi-node environment
https://support.na.sage.com/selfservice/viewdocument.do?externalId=102936

External sites (e.g. Microsoft, etc.)

SMB: File and printer sharing ports should be open
https://docs.microsoft.com/en-us/windows-server/storage/file-server/best-practices-analyzer/smb-open-file-sharing-ports

Steps to convert secondary runtime architecture to Multi-Main

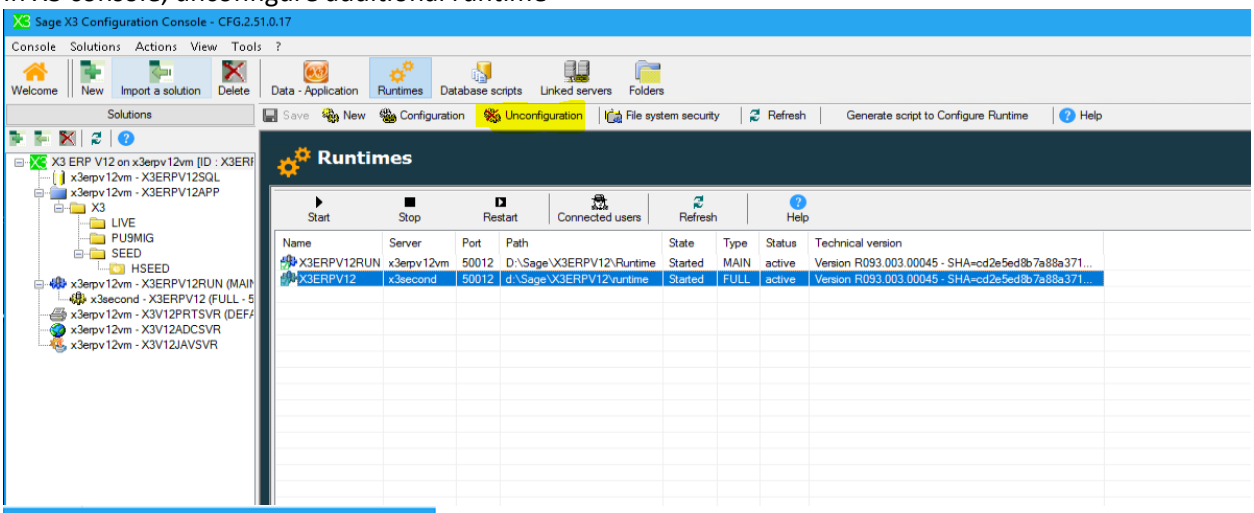
Initial setup and checks

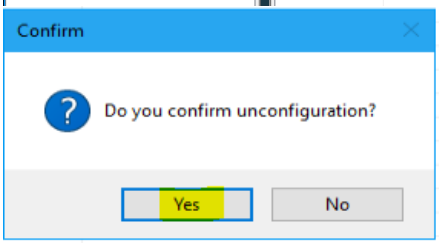
Shutdown Syracuse on both nodes
Shutdown Print Server from MAIN node
Shutdown MAIN runtime service

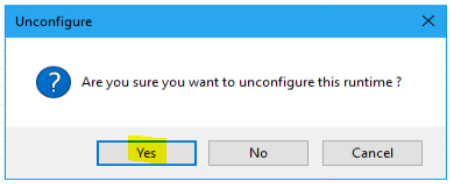
Make sure all node.exe and adonix.exe have disappeared on both nodes

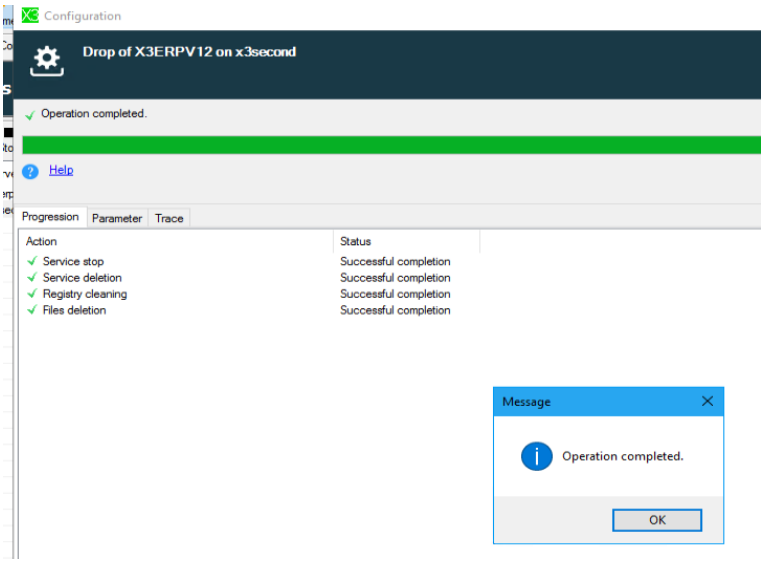
Unconfigure and uninstall any secondary runtimes

In X3 console, unconfigure additional runtime

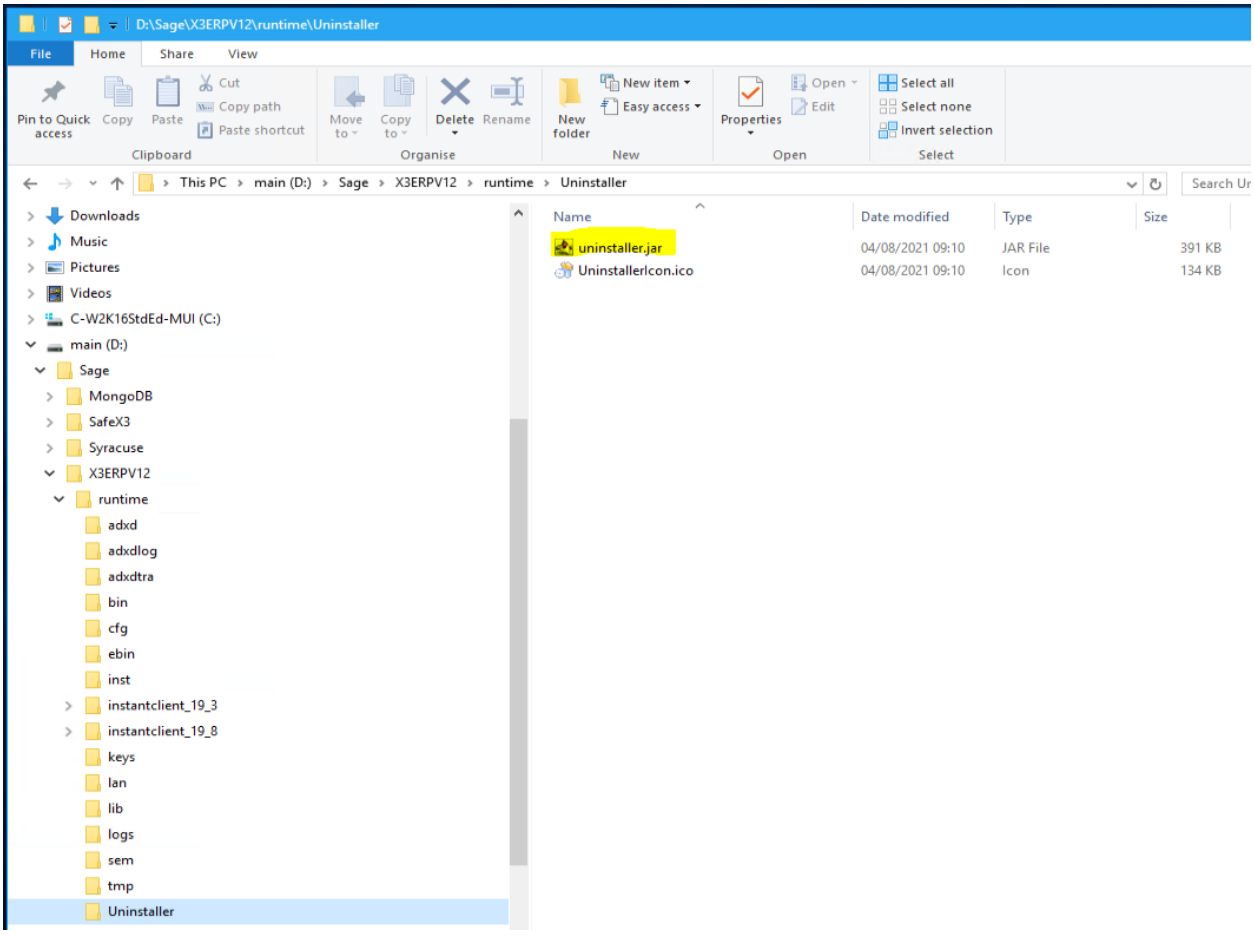


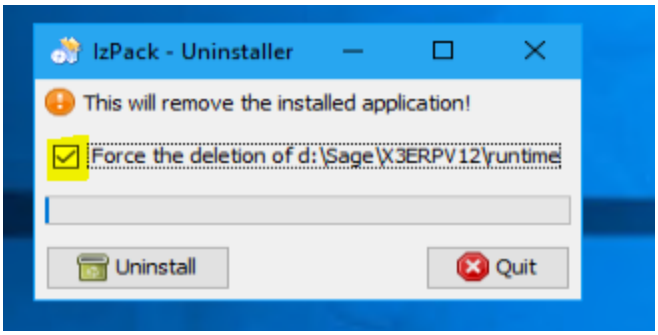






Uninstall runtime from additional runtimes

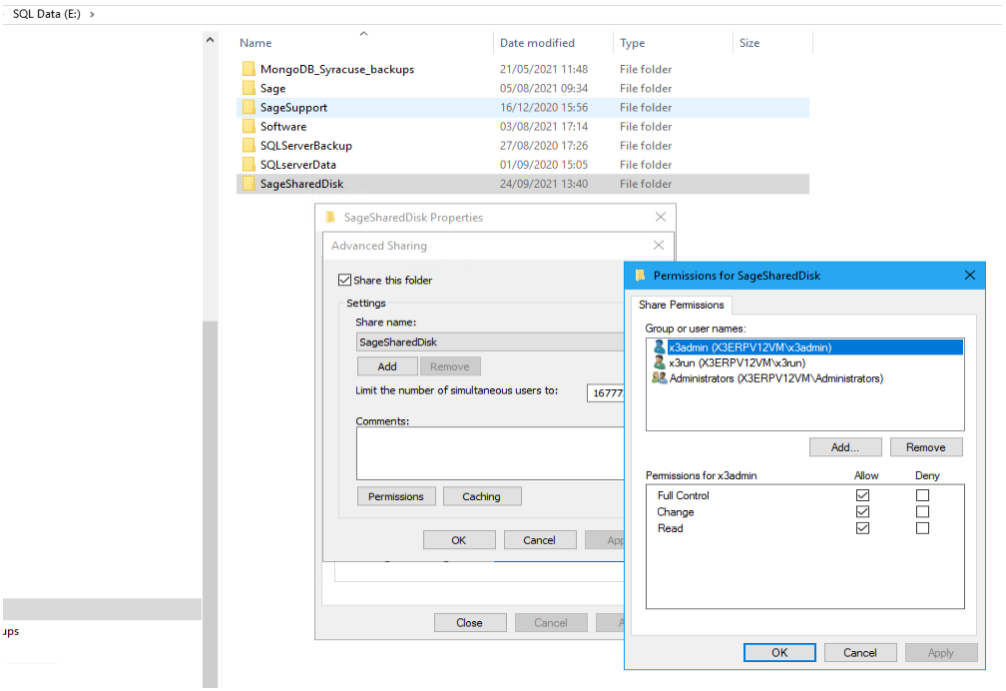


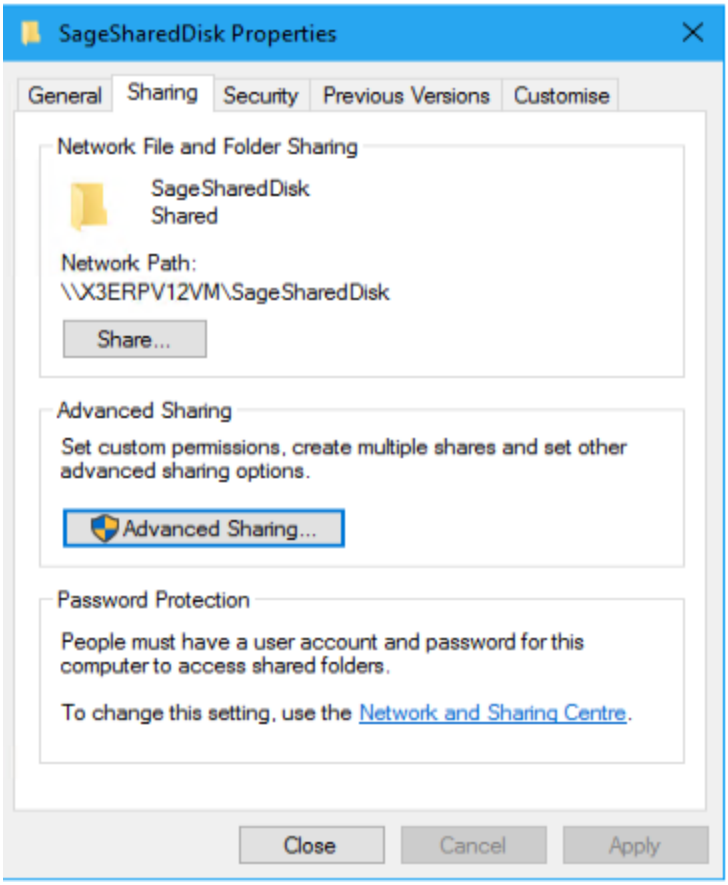


Setup shared disk on X3ERPV12VM server

In my simple test scenario, I will use my original MAIN server as the host for my shared disk. For a LIVE system, you would of course use some kind of network share location which is robust and highly available, such as Network-attached storage (NAS) or Storage Area Network (SAN).

Create "E:\SageSharedDisk" directory and setup Full control for "x3run" and "x3admin" users
Setup Windows share on "E:\SageSharedDisk" for use as shared drive. NOTE: You can use "hidden" share names if you wish (i.e. use '$' at end of sharename)





Update firewall rules to add Windows filesharing ports

TCP 139 and 445 (Windows Fileshare)

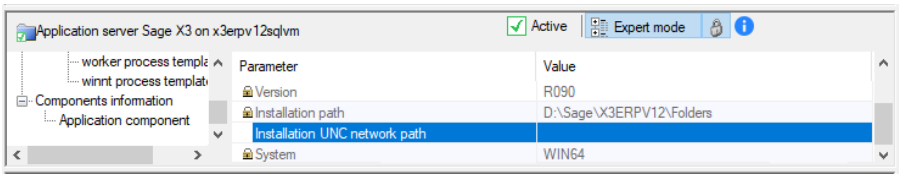
Check you can access the following share from local server and **all** remote runtime servers, whilst logged in as X3 **runtime** user account

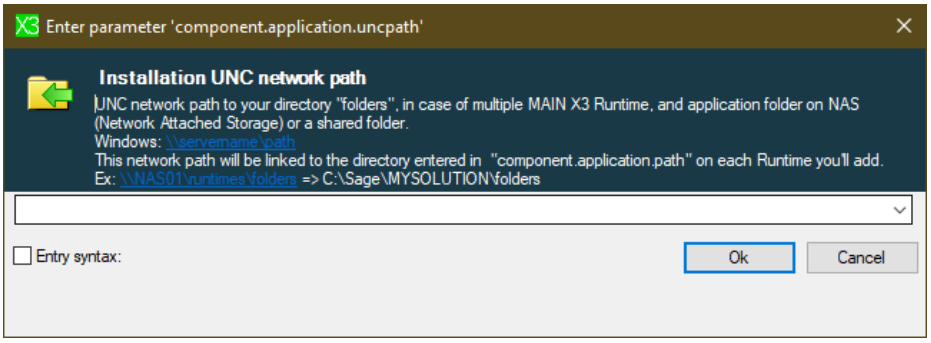
\\X3ERPV12VM\SageSharedDisk

Setup X3 to use shared disk

In Sage X3 Console, when connected on the X3 Solution tab:

- in the "Application server" windows (the one in the middle with the Apache path), click on the "Expert mode" icon
- go right to the end to "Installation UNC network path" and double click for editing

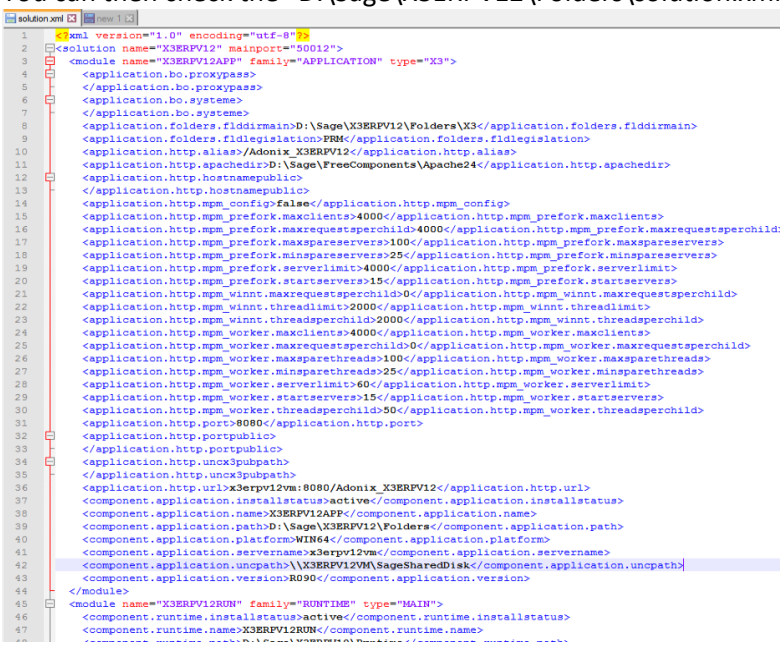




Enter the appropriate share name, e.g. “\\X3ERPV12VM\SageSharedDisk”

Save the change and exit the Console

You can then check the “D:\Sage\X3ERPV12\Folders\solution.xml” so confirm it now has the UNC path



```
<?xml version="1.0" encoding="utf-8"?>
<solution name="X3ERPV12" mainport="50012">
  <module name="X3ERPV12APP" family="APPLICATION" type="X3">
    <application.bo.proxypass>
    </application.bo.proxypass>
    <application.bo.systeme>
    </application.bo.systeme>
    <application.folders.flddirmain>D:\Sage\X3ERPV12\Folders\X3</application.folders.flddirmain>
    <application.folders.fldlegislation>PRM</application.folders.fldlegislation>
    <application.http.alias>/Adonix_X3ERPV12</application.http.alias>
    <application.http.apachedir>D:\Sage\FreeComponents\Apache24</application.http.apachedir>
    <application.http.hostnamepublic>
    </application.http.hostnamepublic>
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    <application.http.mpm_prefork.maxclients>4000</application.http.mpm_prefork.maxclients>
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    <application.http.port>8080</application.http.port>
    <application.http.portpublic>
    </application.http.portpublic>
    <application.http.uncx3pubpath>
    </application.http.uncx3pubpath>
    <application.http.url>x3erpv12vm:8080/Adonix_X3ERPV12</application.http.url>
    <component.application.installstatus>active</component.application.installstatus>
    <component.application.name>X3ERPV12APP</component.application.name>
    <component.application.path>D:\Sage\X3ERPV12\Folders</component.application.path>
    <component.application.platform>WIN64</component.application.platform>
    <component.application.servername>x3erpv12vm</component.application.servername>
    <component.application.uncpath>\\X3ERPV12VM\SageSharedDisk</component.application.uncpath>
    <component.application.version>R090</component.application.version>
  </module>
  <module name="X3ERPV12RUN" family="RUNTIME" type="MAIN">
    <component.runtime.installstatus>active</component.runtime.installstatus>
    <component.runtime.name>X3ERPV12RUN</component.runtime.name>
```
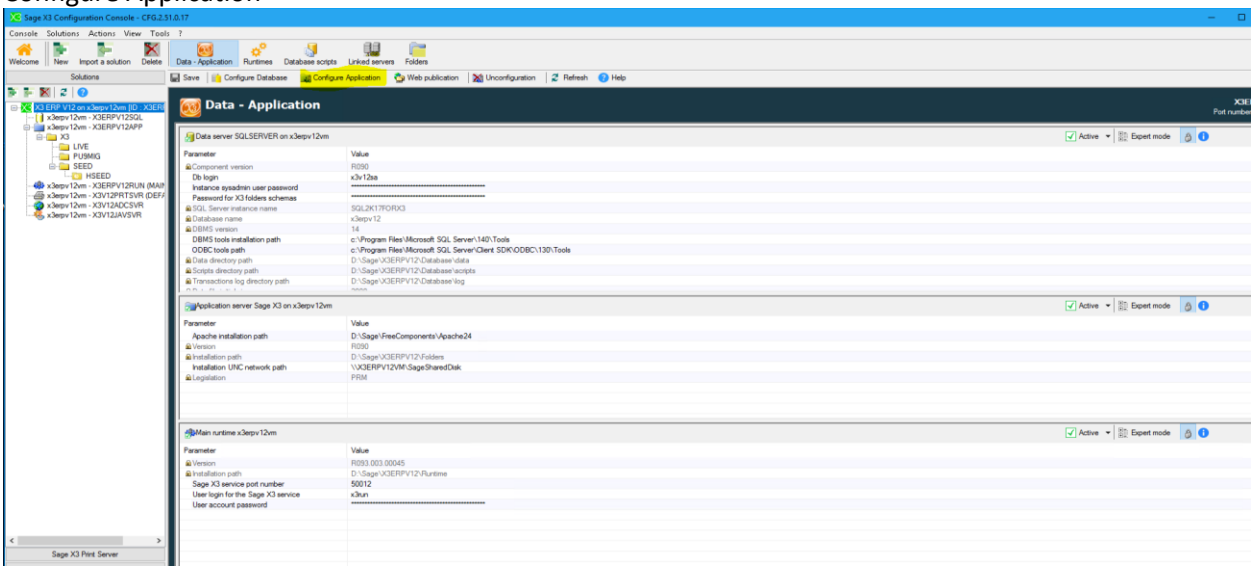
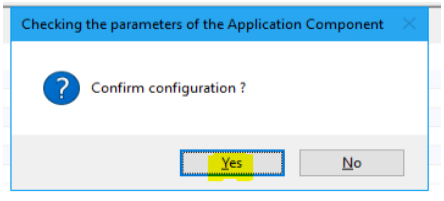
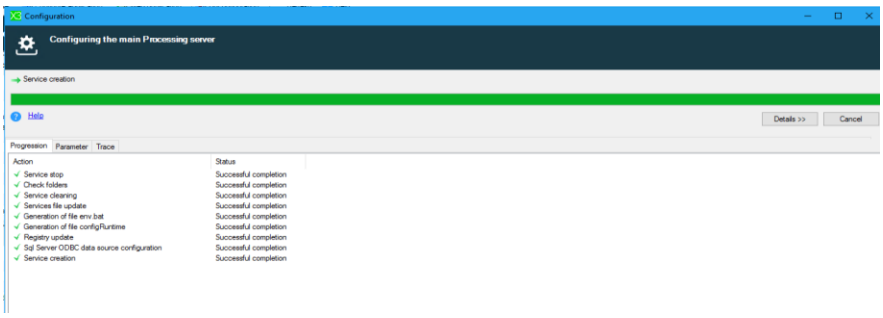

Manually move the folders directory to the shared drive location

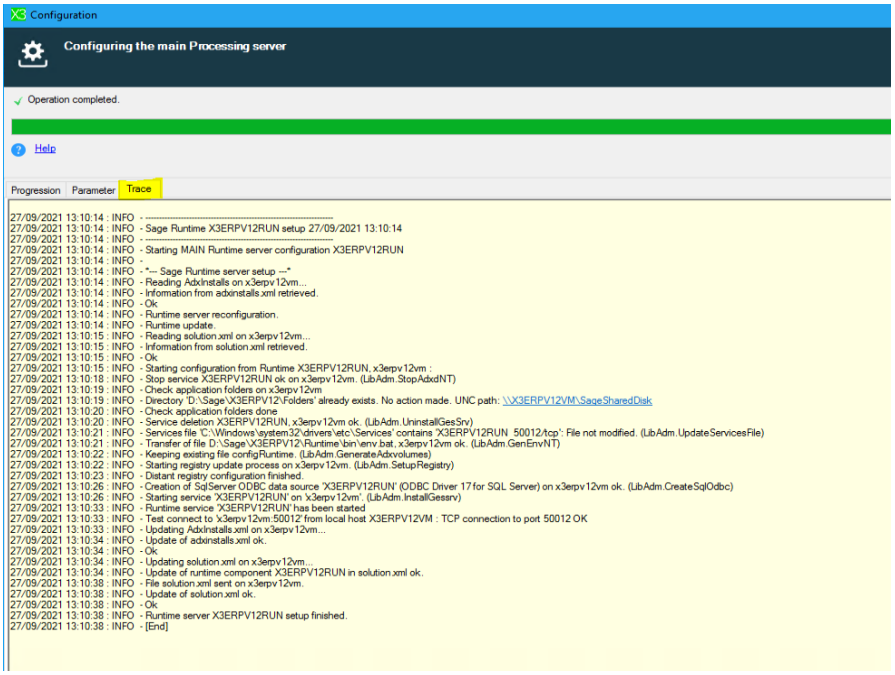
Launch X3 Console

Configure Application







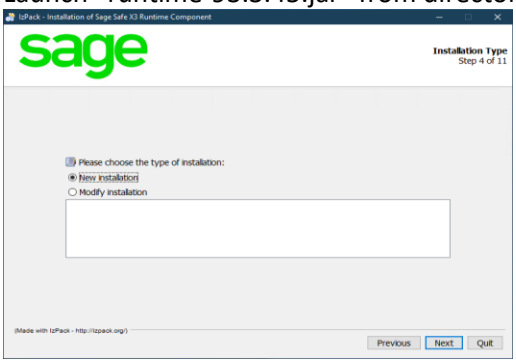


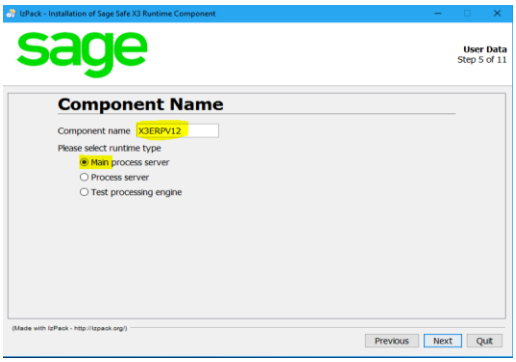
This process will create the symbolic links as needed.

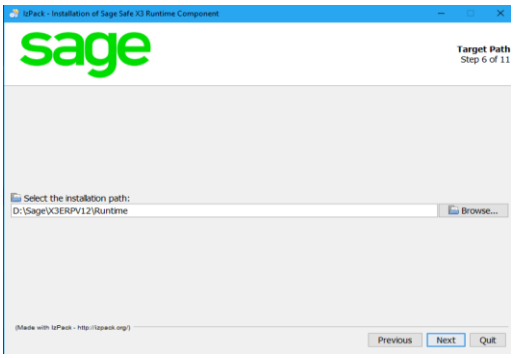
Re-install secondary Runtimes as MAIN

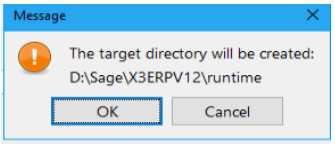
Install Main Runtime (Server X3SECOND)

Launch “runtime-93.3.45.jar“ from directory “T:\Software\Patch27\Runtime_93.3.45”

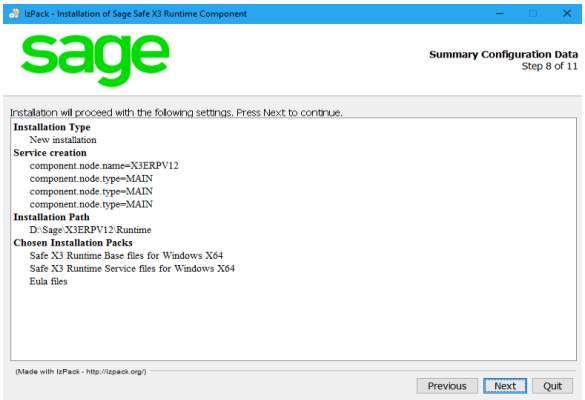


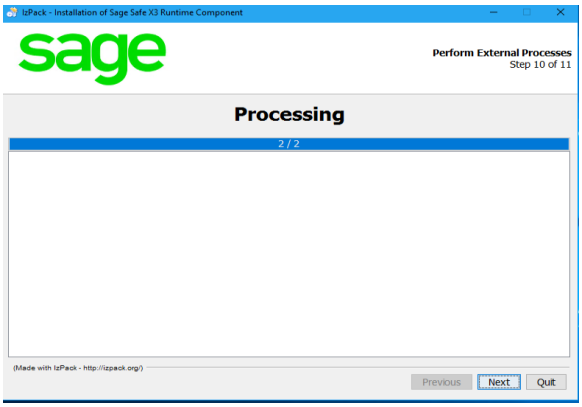






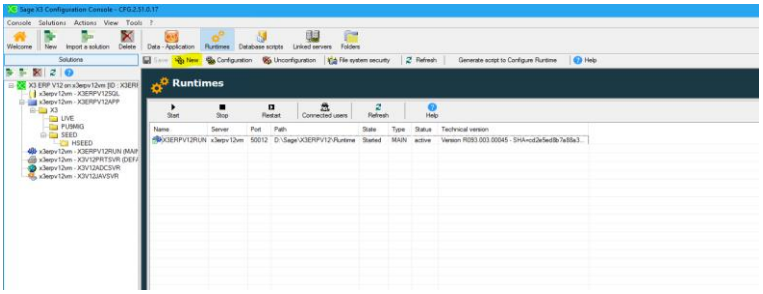
NOTE: This MUST match the first MAIN installation path. i.e. all MAIN runtime servers must have the same disk drive letters and directory structure

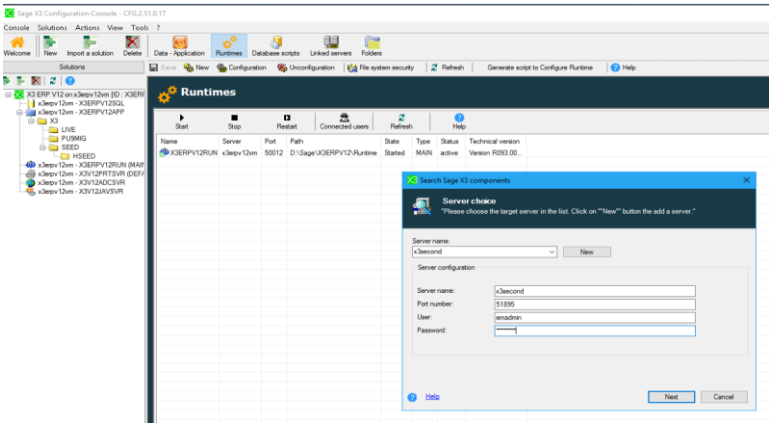


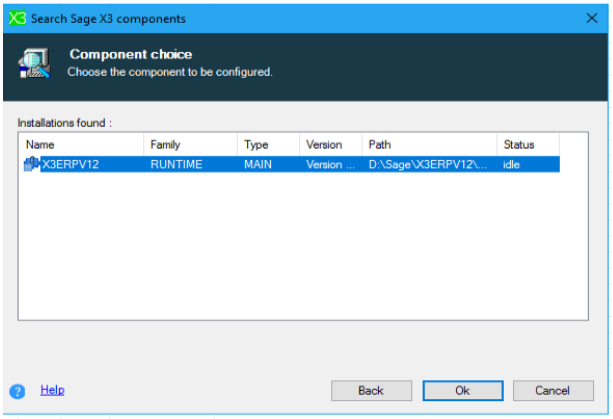


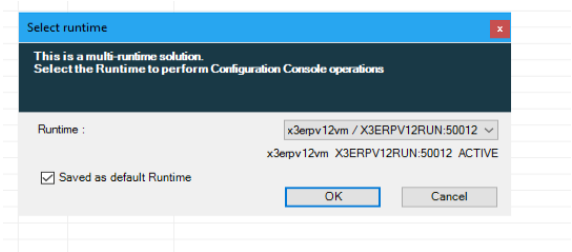
Configure runtime in X3 console (Server X3ERPV12VM)

Add X3SECOND in runtimes





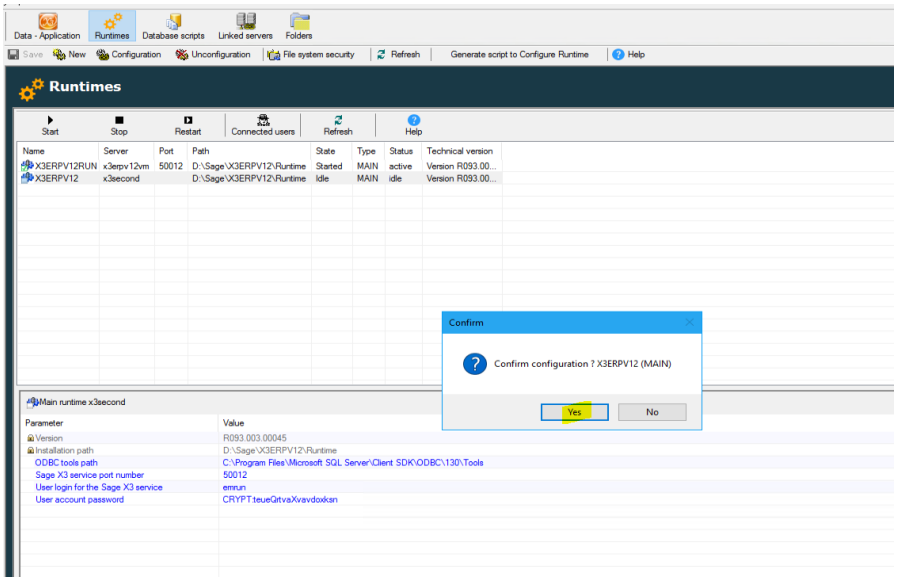


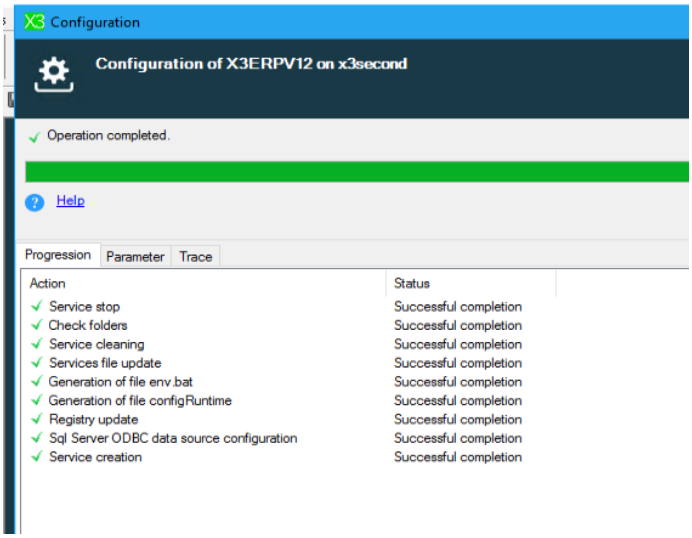


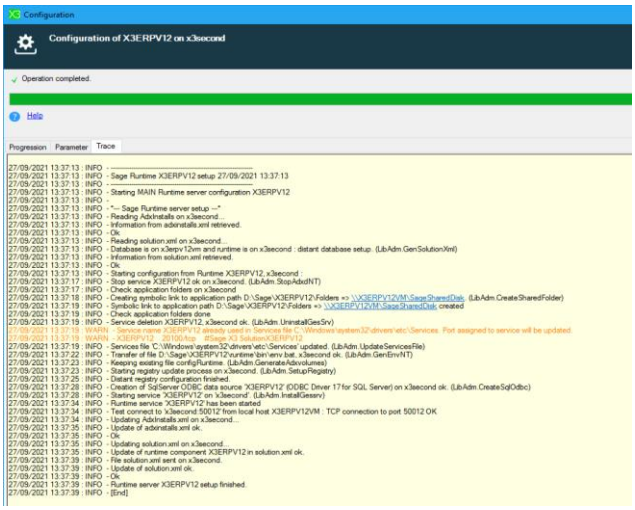
Select the “x3second” server and add in the required settings:

- ODBC tools path: C:\Program Files\Microsoft SQL Server\Client SDK\ODBC\130\Tools (from dropdown)
- Port number: 50012
- User login: emrun
- Password: <Enter appropriate password>

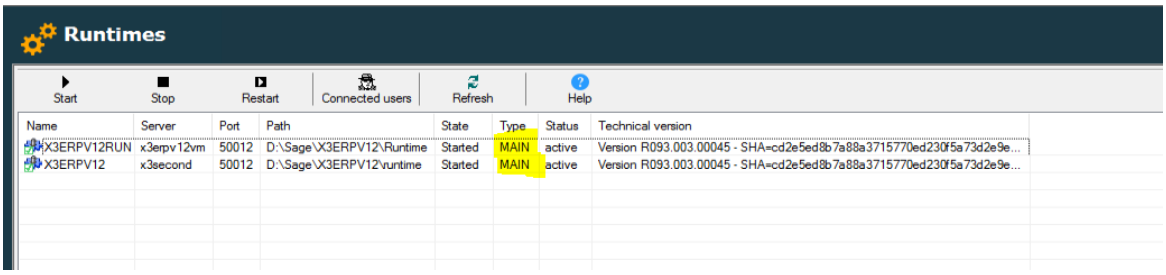
Click “Configuration”







The warning message was due to a previous installation, it has been updated anyway so can ignore this message.

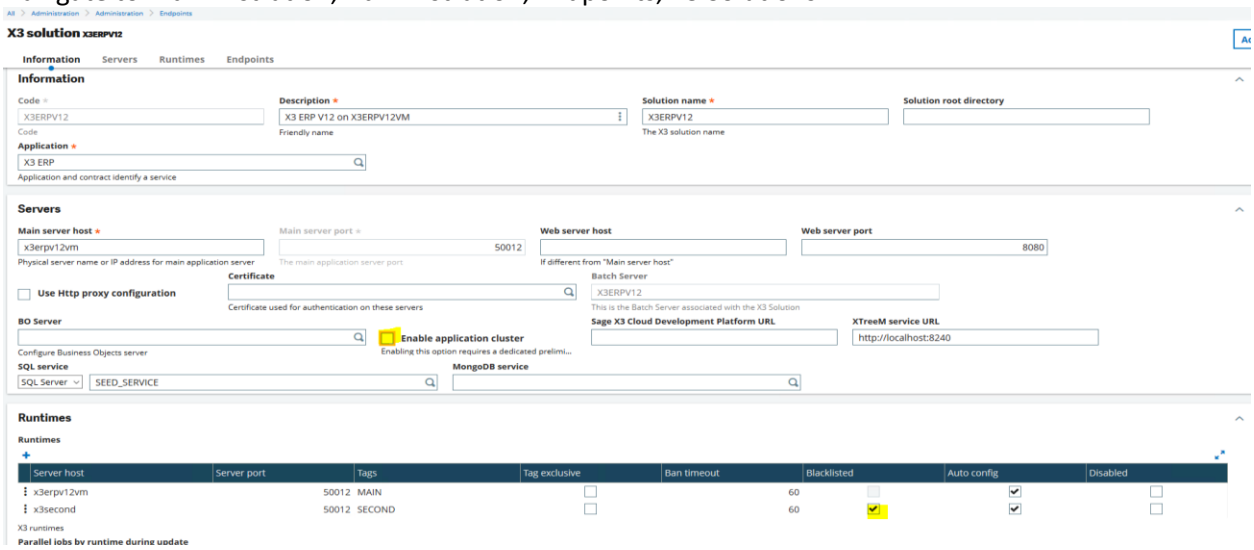


Note that both are now MAIN types

Startup Syracuse

Login to front end as ADMIN

Navigate to Administration, Administration, Endpoints, X3 Solutions



Check the box for “Enable application cluster”

Uncheck “Blacklisted” for the “x3second” server

SAVE

Copy over PEM files to the X3SECOND server into “..\runtime\keys” directory (Copy these files from the same directory on the “X3ERPV12VM” server)

Stop Syracuse service

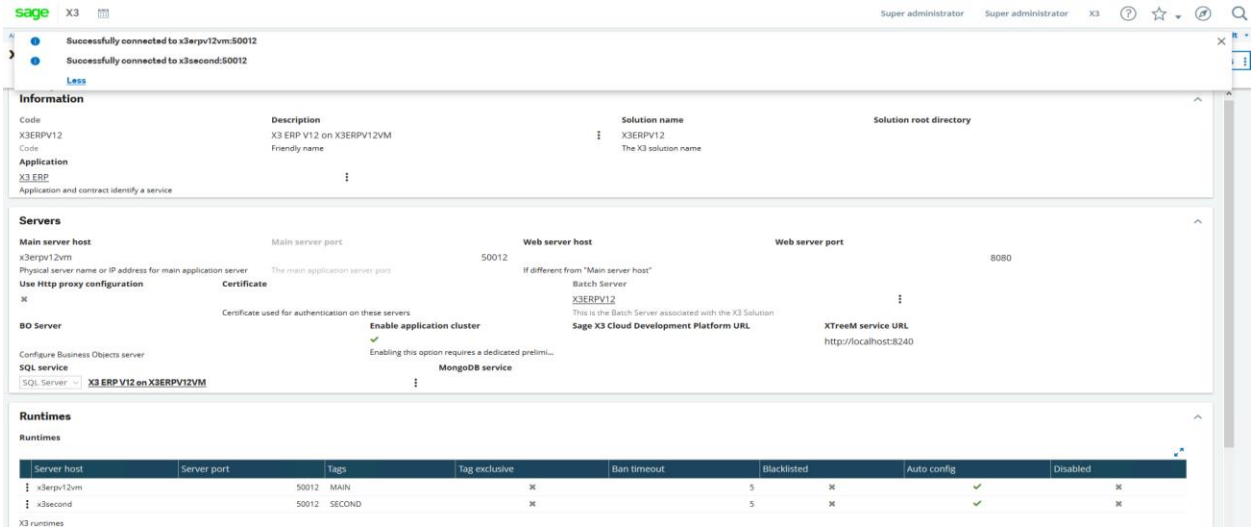
Restart Runtime services on both servers

Start Syracuse service

Login to front end as ADMIN

Navigate to Administration, Administration, Endpoints, X3 Solutions

Run the “Check all server settings” test



Connect to X3 folder
Check can access run any Classic function

From different browser, login as “USR01” user who is configured to connect to X3SECOND by preference and launch classic function

Check has connected using X3SECOND runtime server as expected

100 %

Results | Messages

	Session Id	DB Name	Program	Login Name	EM User	Web Host	Module	Function	Login	Status	Process Id	CPU (secs)	Memory (Kb)	Scheduled time (secs)	Session elapsed time (secs)	Last Request Start T
1	57	x3erpv12	sadoss.exe	LIVE	USR01	X3ERPV12VM	1	R_ACHGENVX3	27/09/2021 13:51:13	sleeping	7156	0	24576	0	0	27/09/2021 13:51:1
2	59	x3erpv12	sadoss.exe	LIVE	USR01	X3ERPV12VM	1	GESAUS	27/09/2021 13:51:23	sleeping	2152	0	32768	0	0	27/09/2021 13:51:3
3	53	x3erpv12	sadoss.exe	SEED	NULL	NULL	NULL	NULL	27/09/2021 13:46:23	sleeping	6132	0	32768	0	0	27/09/2021 13:46:2
4	54	x3erpv12	sadoss.exe	SEED	NULL	NULL	NULL	NULL	27/09/2021 13:46:24	sleeping	7212	0	32768	0	0	27/09/2021 13:46:2
5	55	x3erpv12	sadoss.exe	X3	NULL	NULL	NULL	NULL	27/09/2021 13:49:26	sleeping	1572	0	32768	0	0	27/09/2021 13:49:3
6	51	x3erpv12	sadoss.exe	X3	NULL	NULL	NULL	NULL	27/09/2021 13:46:09	sleeping	7924	0	24576	0	1	27/09/2021 13:51:3
7	52	x3erpv12	sadoss.exe	X3	NULL	NULL	NULL	NULL	27/09/2021 13:46:50	sleeping	1040	0	32768	0	0	27/09/2021 13:46:5

	Process Server	Connection Type	How_Many
1	X3ERPV12VM	Batch	1
2	X3ERPV12VM	Web page	1
3	X3ERPV12VM	Web services	2
4	X3SECOND	Classic page	2
5	X3SECOND	Web page	1

	Syracuse Host	Connection Type	How_Many
1	X3ERPV12VM	Classic page	2
2	X3ERPV12VM	Web page	1
3	X3ERPV12VM.eu-west-1.compute.internal	Batch	1
4	X3ERPV12VM.eu-west-1.compute.internal	Web page	1
5	X3ERPV12VM.eu-west-1.compute.internal	Web services	2

Restart batch server and web pools

Re-check and re-test can login from both servers and execute Classic sessions. The load should be balanced across both process servers

Conclusion

This build diary primarily describes how to convert an existing multiple runtime environment to instead use the Multi-Main runtime setup.

Hopefully this will give you some guidance if you need to perform a similar task.