

# sedApta Web Scheduler Installation

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Sage



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# Introducing sedApta's Web Scheduling

# What is Web Scheduling?

Web Scheduling is an add-on which provides planning of production processes, with a focus on automatic scheduling that allows further manual editing and fine-tuning that grants users a great degree of control over the production plan.

Sage X3 Web Scheduling supports simultaneous scheduling sessions by different planners and allows the creation of different versions of the production plan within a scheduling session.

One of the key features is the capability to continuously recalculate the production plan's status in real time as it is being worked on, allowing users to immediately verify the global effects of any local modification.

Web Scheduling extracts data from X3, and it can subsequently update X3 with the results of planning.

# What are the constituent components?

Web Scheduling is made up of the following Components:

- 1) ACM – Access Control Manager for setting up Users
- 2) Analytics – Import and Export data from X3 to Web Scheduling
- 3) License Manager – License Web Scheduling and assign Roles to Users set up in ACM
- 4) Factory Scheduling – Carry out Scheduling on the data imported in Analytics
- 5) Bricks – Customisation tool for Factory Scheduling User Interface
- 6) Notifications – Send and Receive notification emails between components in Factory Scheduling
- 7) Unit of Measurement for MoM ( Manufacturing Operations Management )
- 8) Material for MoM
- 9) Shiftbook for MoM

# What are the constituent components?

- 10) Company Chart – Configure/maintain the Company Chart for Factory Scheduling
- 11) Entity Manager – a Customisation tool for the Factory Scheduling database

# What are the constituent components?

Underlying Web Scheduler is a set of Databases in a dedicated Database Instance:

- 1) ACNDB – Access Control Manager
- 2) Analytics – User Interface, User Data and User Roles
- 3) Bricks – GUI Customisations
- 4) CCDB – Company Chart data
- 5) CMDB – Web Scheduling Configuration Manager information
- 6) NEDB – Notification Engine
- 7) NICIM – MOM (Manufacturing Operations Management) Factory Scheduling data
- 8) (NICIM\_WRK deprecated in 2023 Release)

# Preparation for Installation



# Preparation for installation

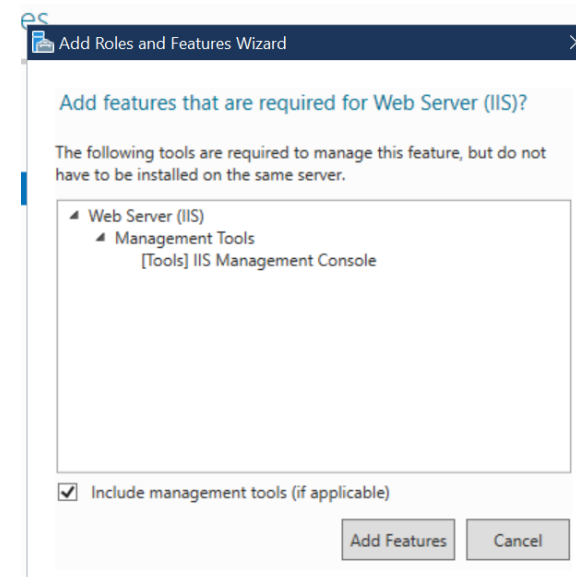
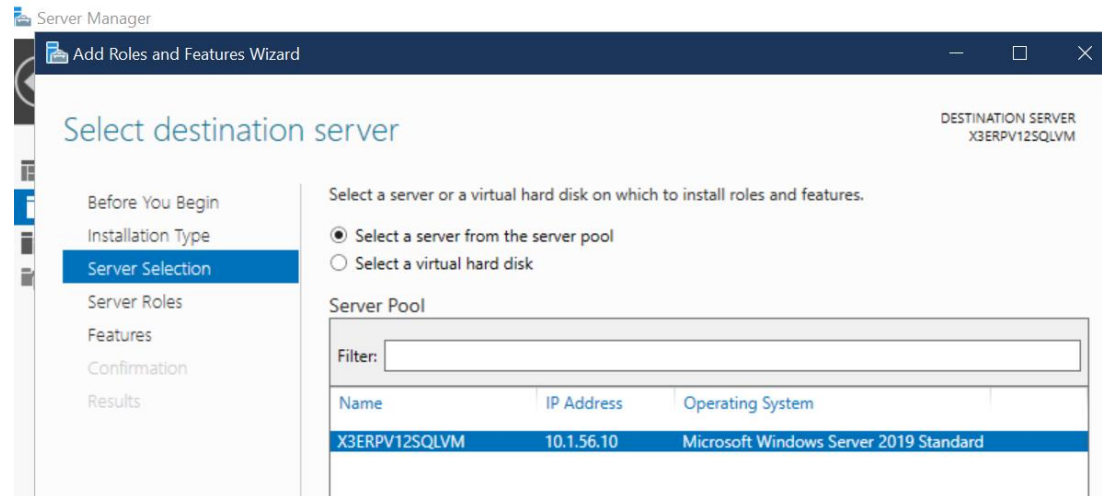
In this session, I'm assuming we're installing a GraphQL version of Web Scheduling configured to use HTTPS.

There are several components which need to be set up prior to running the Web Scheduler Installer:

- 1) Configure IIS for Web Scheduling components
- 2) Obtain SSL Certificates
- 3) Check X3 Folder Setup
- 4) Install X3 Services - as we're using GraphQL, we need to install X3 Services which is part of Mobile Automation
- 5) Create an instance of SQL Server or Oracle as appropriate – in our example, we'll use SQL Server
- 6) For SQL Server, ideally, set up a separate Database Administrator account in the Web Scheduler instance
- 7) Set up a Connected Application entry for Web Scheduling – this will generate a “Client ID”/”Secret” pair to use during the installation of Web Scheduling.
- 8) Set up a SOAP Pool in X3 (for **pre 2024 R1**)

# Configure IIS

The sedApta Web Scheduling package requires IIS to be installed.



# Configure IIS

Add Roles and Features Wizard

## Select features

Before You Begin  
Installation Type  
Server Selection  
Server Roles  
**Features**  
Web Server Role (IIS)  
Role Services  
Confirmation  
Results

Select one or more features to install on the selected server.

### Features

- NET Framework 3.5 Features (1 of 3 installed)
- .NET Framework 4.7 Features (2 of 7 installed)
  - .NET Framework 4.7 (Installed)
  - ASP.NET 4.7
- WCF Services (1 of 5 installed)
- Background Intelligent Transfer Service (BITS)
- BitLocker Drive Encryption
- BitLocker Network Unlock
- BranchCache
- Client for NFS
- Containers
- Data Center Bridging
- Direct Play
- Enhanced Storage

Add Roles and Features Wizard

## Select role services

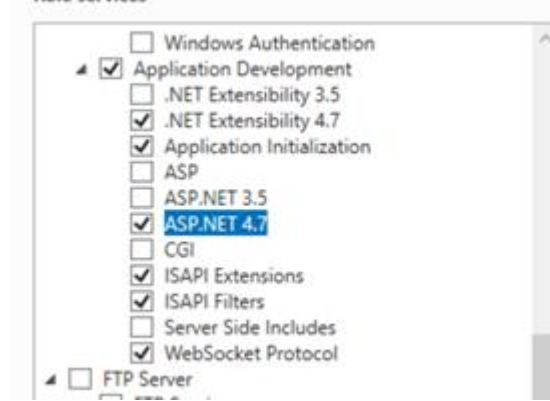
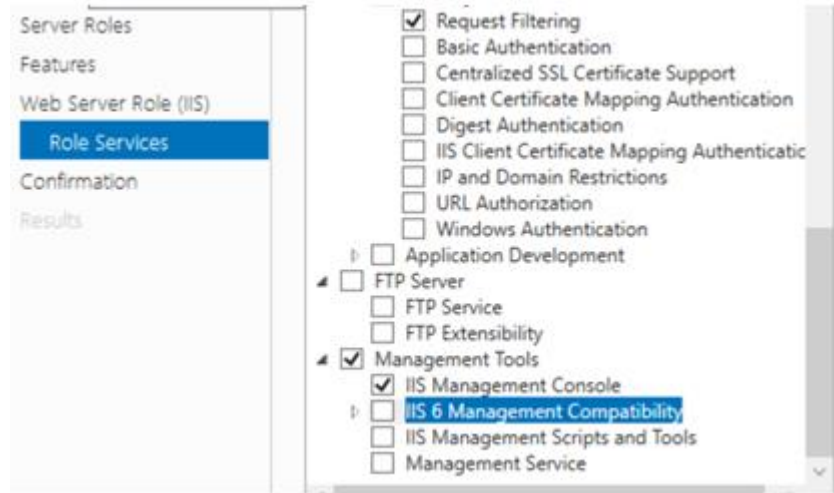
Before You Begin  
Installation Type  
Server Selection  
Server Roles  
Features  
Web Server Role (IIS)  
**Role Services**  
Confirmation  
Results

Select the role services to install for Web Server (IIS)

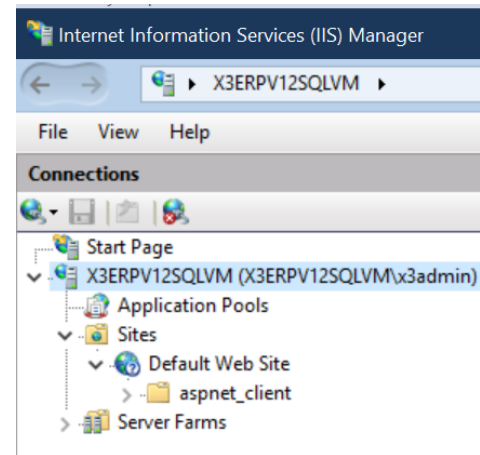
### Role services

- Web Server
  - Common HTTP Features
    - Default Document
    - Directory Browsing
    - HTTP Errors
    - Static Content
    - HTTP Redirection
    - WebDAV Publishing
- Health and Diagnostics
  - HTTP Logging
  - Custom Logging
  - Logging Tools
  - ODBC Logging
  - Request Monitor
  - Tracing
- Performance
  - Static Content Compression
  - Dynamic Content Compression
- Security

# Configure IIS



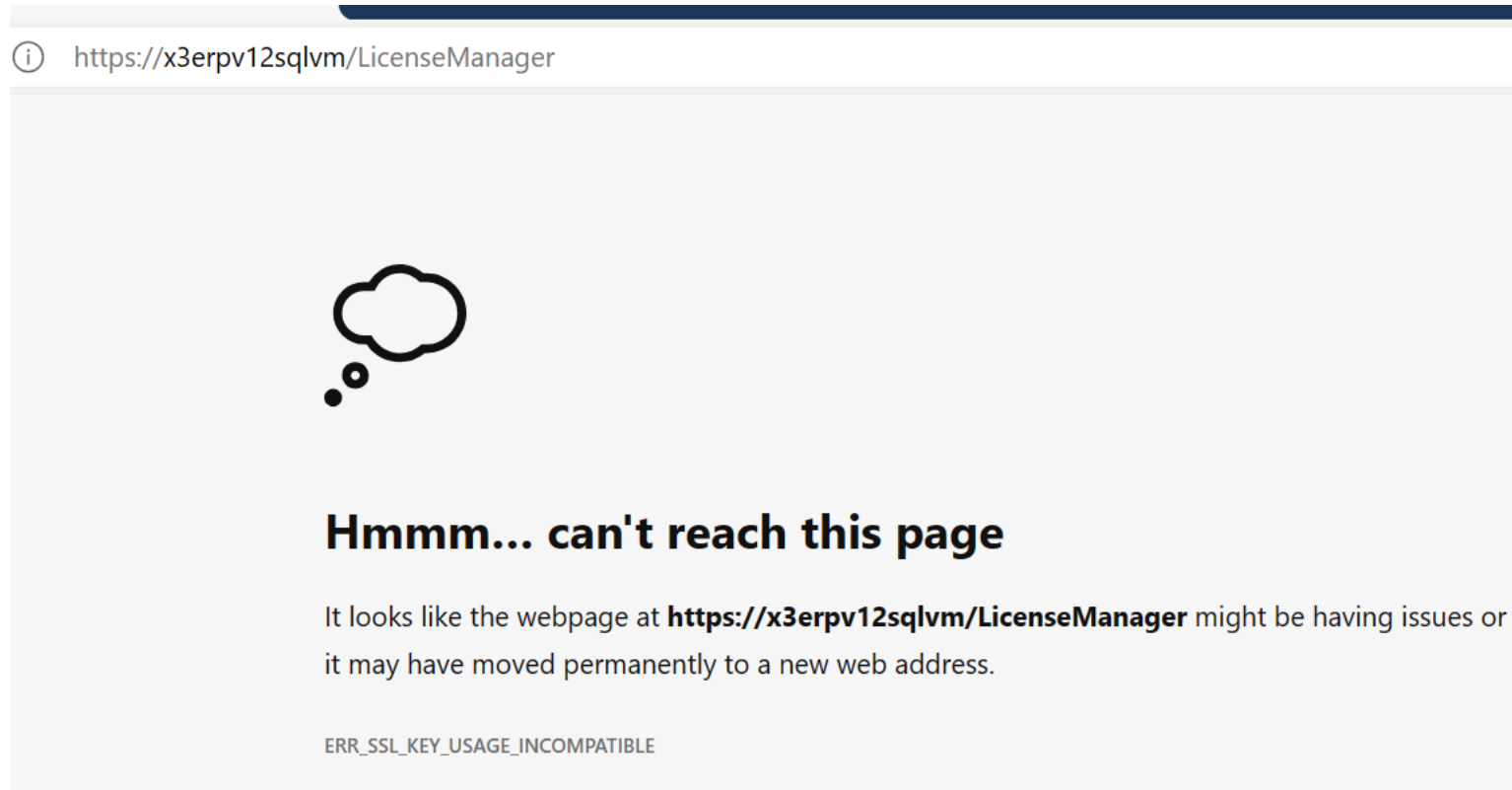
Log into IIS Manager and check that all is ok:



# Obtain SSL Certificates if required

It's advisable to set up X3, X3Services and Web Scheduling to have secure connections.

I created a self-signed certificate using openssl, and assigned that to the sedApta Web Scheduling sites in IIS via the Installer but I had the following when I tried to launch Analytics or License Manager from IIS

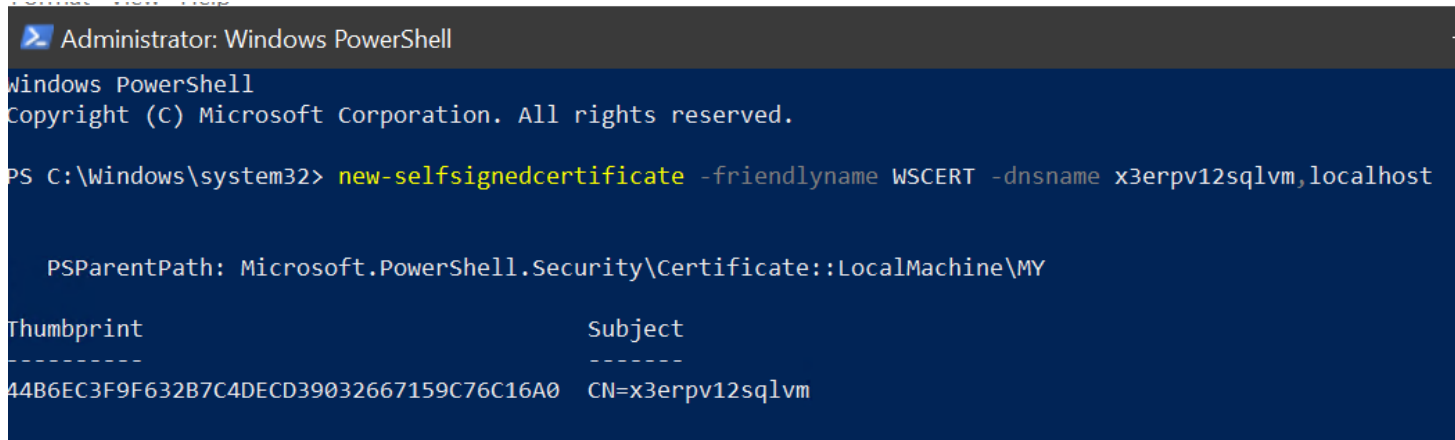


# Obtain SSL Certificates if required

I found an article which suggested creating a new self-signed certificate which includes “Digital Signature” in the list of attributes in “Key Usage” parameter of the Certificate and ensured that it was available in IIS.

In my case, I’ve created a self-signed Certificate using Powershell command `new-selfsignedcertificate` – Powershell must be involved with “As Administrator”. For example:

```
new-selfsignedcertificate -friendlyname WSCERT -dnsname x3erpv12sqlvm,localhost
```



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

PS C:\Windows\system32> new-selfsignedcertificate -friendlyname WSCERT -dnsname x3erpv12sqlvm,localhost

PSParentPath: Microsoft.PowerShell.Security\Certificate::LocalMachine\MY

Thumbprint                               Subject
-----
44B6EC3F9F632B7C4DECD39032667159C76C16A0  CN=x3erpv12sqlvm
```

# Obtain SSL Certificates if required

After creating the Certificate, ensure that it is used in the Default Web Site Bindings in IIS:

The image shows two screenshots from the Internet Information Services (IIS) Manager. The left screenshot displays the 'Server Certificates' console for the 'X3ERP12SQLVM' server. A table lists certificates, with 'WSCERT' selected. The 'Details' tab shows the following information:

Field	Value
Public key parameters	05 00
Enhanced Key Usage	Client Authentication (1.3.6.1.4.1.311.2.1.1)
Subject Alternative Name	DNS Name=x3erpv12sqlvm, D...
Subject Key Identifier	a2edb290ee1fdea4e4768ca49...
Key Usage	Digital Signature, Key Encipher...
Thumbprint	51b2322f02d70f3b4b76ba2ae...
Friendly name	WSCERT

The right screenshot shows the 'Default Web Site Bindings' dialog box. The 'https' binding is selected, and the 'SSL certificate' dropdown is set to 'WSCERT'. The 'Host name' is 'X3ERP12SQLVM' and the 'Port' is '443'.

# Obtain SSL Certificates if required

In retrospect, adding the Certificate to Bindings in IIS could've been done during the installation process the "Deploy on IIS" screen gives you the option to manage IIS – this, in turn allows you to import or bind Certificates to Sites



Deploy on IIS

Principal Site

Default Web Site

Manage IIS...

Protocol

Host

Port

Path

https

X3ERP12SQLVM

443



# Obtain SSL Certificates if required

Search:

ISSUED TO	EXPIRA	FRIENDLY NAME	CERTIFICATE STORE	ISSUED BY
Safe X3 MongoDB M	4/21/20	Safe X3 MongoDB MONG	Personal	MongoDB
X3ERP12SQLVM	3/4/20	X3ERP12SQLVM	Personal	X3ERP12SQLVM
x3erpv12sqlvm	3/28/20	WSCERT	Personal	x3erpv12sqlvm

Buttons: Import Certificate..., View...

Manage IIS

Sites: + Add Website Certificates...

Default Web Site Rename Remove + Add Binding

Type	IP address	Port	Host name
net.tcp		0	
net.pipe		0	
http	80		X3ERP12SQL
https	*	443	X3ERP12SQL

Edit Site Binding

Type: https Ip Address: \* Port: 443

Host name: X3ERP12SQLVM  
Example: www.contoso.com or marketing.contoso.com

SSL certificate: WSCERT Select... View...

Safe X3 MongoDB MONGO01 x3erpv12sqlvm  
X3ERP12SQLVM  
WSCERT Cancel Ok

# Check Folder Setup

Pre 2024 R1

GraphQL Mutations invoke X3 Web Services or Import Templates with the data gathered by the external application (currently, Mobile Automation and Web Scheduling).

As GraphQL evolves, the list of Web Services and Import Templates changes with each Release of V12 and Mobile Automation. It is therefore important to make sure that the set of GraphQL Web Services is relevant to the Releases of V12 and Mobile Automation, and that those are compatible with the version of Web Scheduling being installed.

Each X3 Folder has its own copy of Web Services. The Web Services installed with Mobile Automation all start with “CWS”, and they must be Published in order to be used by GraphQL.

GraphQL also uses the standard AOWSIMPORT Web Service to update X3 using Import Templates – these all start with “CWS” as well.

The relevant Web Service definitions are available as part of the SEED Folder data supplied with each Release. They can be copied to your installation’s Folder using X3’s Patching mechanism – select the AWE Object and range of data from CWS to CWT. Once copied, all the CWS Web Services need to be Published.

# Check Folder Setup

2024 R1

As mentioned in the “New Features” presentation, GraphQL Mutations no-longer use SOAP Web Services – it uses new Import Templates, which start with “JSO”, and Sub-programs, which start with “CWS”.

The relevant Import Template definitions and Sub-programs are available as part of the SEED Folder data supplied with each Release, and are also held in the X3 Reference Folder, so they will be inherited by Child Folders.

Check that the Import Templates and Sub-programs are present in the Folders.

The available Mutation mappings are visible in the Development, Data and Parameters, API Operations option.

# Install X3 Services

Since 2023, Web Scheduling has been able to use the classic JSON interface (Sage\_X3\_Interface) or a GraphQL interface (Sage X3 Interface GraphQL) to interact with X3. The later has proved to be faster, and also in line with Sage's long-term policy for interfaces with X3.

In order to take advantage of the GraphQL Interface, Mobile Automation needs to be installed – even if you're not planning to use Mobile Automation, it must be installed as it includes X3Services which powers our generic GraphQL framework and it creates the GraphQL Service (Sage X3 Services).

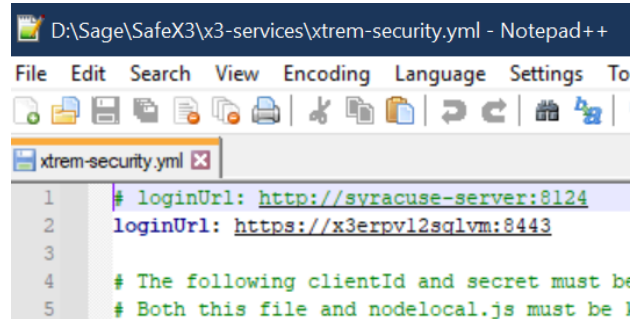
X3Services itself is evolving, and as of 2024 R1 version, 41.0.30, it doesn't require a SOAP Web Service Pool for Mutations (X3 database updates) - more information about this in the Online help for 2024 R1, [Sage X3 Services installation](#), and in the Sage X3 Technical Support Tips and Tricks Spring 2024 “New Features” presentation.

Additional information is available in the following Knowledge Base Article [Additional notes when installing or upgrading X3 services \(New ADC\)](#)

# Install X3 Services

As I am installing X3 Services with HTTPS connection, I need to amend the configuration to allow for the Certificates.

Change xtrem-security.yml to reference https URL



```
D:\Sage\SafeX3\x3-services\xtrem-security.yml - Notepad++
File Edit Search View Encoding Language Settings To
xtrem-security.yml x
1 # loginUrl: http://svracuse-server:8124
2 loginUrl: https://x3erpvl2sqlvm:8443
3
4 # The following clientId and secret must be
5 # Both this file and nodelocal.js must be l
```

Set up Certificate handling in service.js

The set-up in service.js depends on the type of Certificate being used – either a CA Certificate or a Self-signed one. This is covered in the following Knowledge Base Article:

<https://gb-kb.sage.com/portal/app/portlets/results/viewsolution.jsp?solutionid=230908215213030>

# Install X3 Services

I have just got a simple Self-signed certificate, so I've gone for using NODE\_TLS\_REJECT\_UNAUTHORIZED setting

```
service.js x
5   const platform = `${os.platform()}-${os.arch()}`;
6
7   const errorCodes = {
8     badOperation: 1,
9     windowsOnly: 2,
10    cannotSetServiceFailure: 3,
11  };
12  const serviceConfig = {
13    name: 'Sage X3 Services',
14    description: 'Sage X3 Services',
15    script: path.join(__dirname, 'node_modules/@sage/xtrem-cli/bin/xtrem'),
16    nodeOptions: ['--max_old_space_size=4096'],
17    workingDirectory: __dirname,
18    execPath: path.join(__dirname, 'nodejs', `${platform}`, 'node.exe'),
19    env: {
20      name: 'NODE_TLS_REJECT_UNAUTHORIZED',
21      value: '0',
22    },
23  };
24
25  const args = process.argv.slice(2);
```

# Install X3 Services

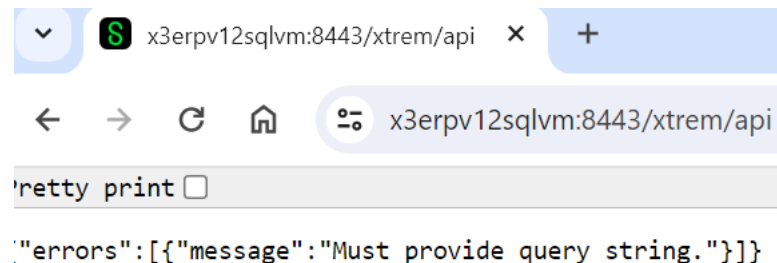
Before continuing, check that X3 Services has been installed correctly, as this forms the basis for communication between Web Scheduling and X3.

Although the GraphQL Sandbox is not required in order to use either Mobile Automation or Web Scheduling, it is recommended that you check that it can be used, as it may be required during any investigations into GraphQL issues.

The User is prompted to log in using a valid X3 User's credentials, and can then run the example Query.

The following checks should be carried-out:

Check X3Services API contactable using HTTPS – the error is expected behaviour



The screenshot shows a web browser window with a single tab titled 'x3erpv12sqlvm:8443/xtrem/api'. The address bar contains the URL 'x3erpv12sqlvm:8443/xtrem/api'. Below the address bar, there is a 'pretty print' checkbox. The main content area of the browser displays a JSON error response: 

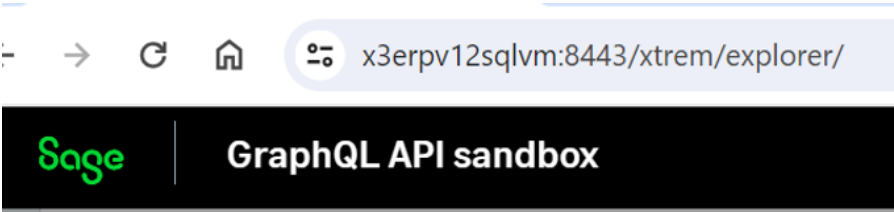
```
["errors":[{"message":"Must provide query string."}]]
```

# Install X3 Services

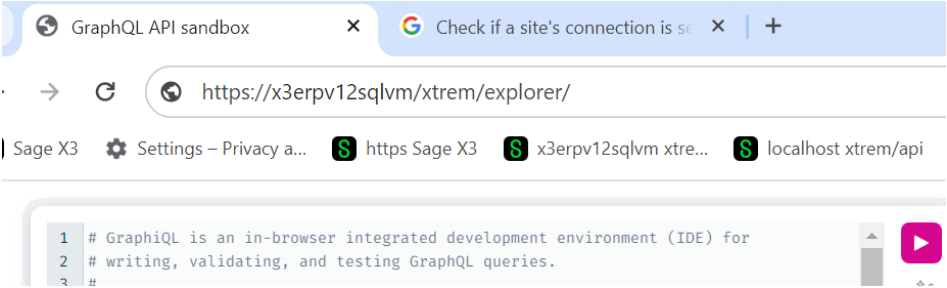
Check Sandbox (for example, <https://x3erpv12sqlvm:8443/xtrem/explorer/>) works:

Once logged in, the following screen should be displayed:

Pre 2024 R1:



2024 R1:



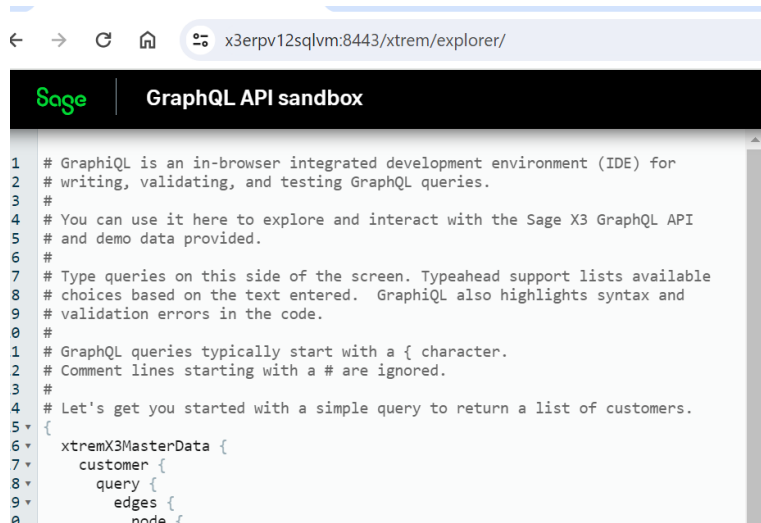


# Install X3 Services

Check GraphQL Queries in Sandbox (<https://3erpv12sqlvm:8443/xtrem/explorer/>):

As noted in the Spring 2024 Tips & Tricks, the “sample” Query doesn’t work in 2024 R1 (this will be rectified later) – use the amended one:

Pre 2024 R1:



```
1 # GraphQL is an in-browser integrated development environment (IDE) for
2 # writing, validating, and testing GraphQL queries.
3 #
4 # You can use it here to explore and interact with the Sage X3 GraphQL API
5 # and demo data provided.
6 #
7 # Type queries on this side of the screen. Typeahead support lists available
8 # choices based on the text entered. GraphQL also highlights syntax and
9 # validation errors in the code.
10 #
11 # GraphQL queries typically start with a { character.
12 # Comment lines starting with a # are ignored.
13 #
14 # Let's get you started with a simple query to return a list of customers.
15 {
16   xtremX3MasterData {
17     customer {
18       query {
19         edges {
20           node {
```

2024 R1:



```
{
  x3MasterData {
    customer {
      query {
        edges {
          node {
            _id
            shortCompanyName
            companyNames {
              query {
                edges {
                  node {
                    companyName
                    denormalizedIndex
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}
```

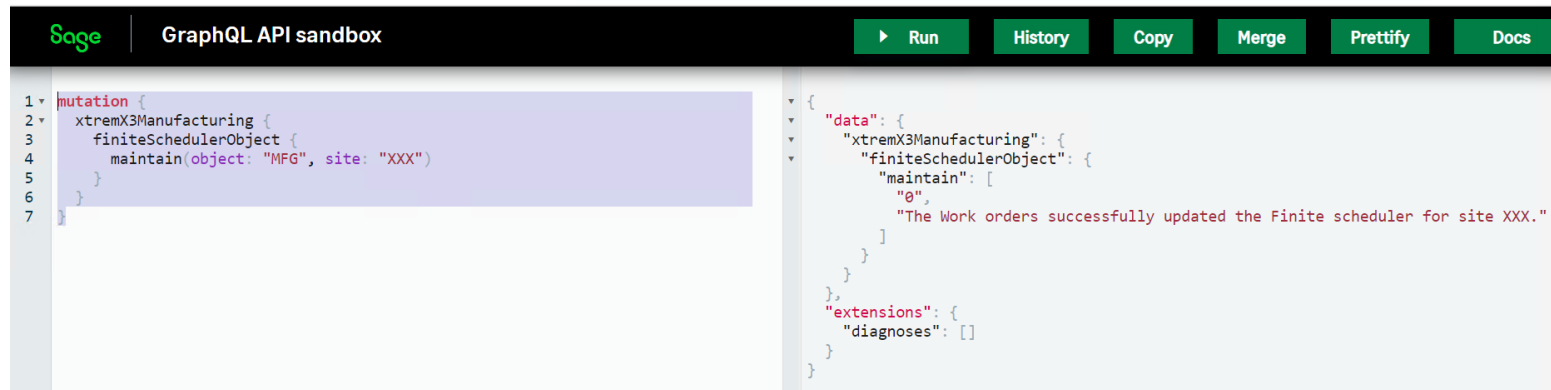
# Install X3 Services

Check GraphQL Mutation

GraphQL Mutations perform update operations (Create, Update or Delete rows in Sage X3 Tables), so the ability to perform any Mutation should be tested at this stage.

I use a “simple” Mutation based on one of the tasks carried-out during a Web Scheduling Total Import

Pre 2024 R1:



```
1 mutation {
2   xtremX3Manufacturing {
3     finiteSchedulerObject {
4       maintain(object: "MFG", site: "XXX")
5     }
6   }
7 }
```

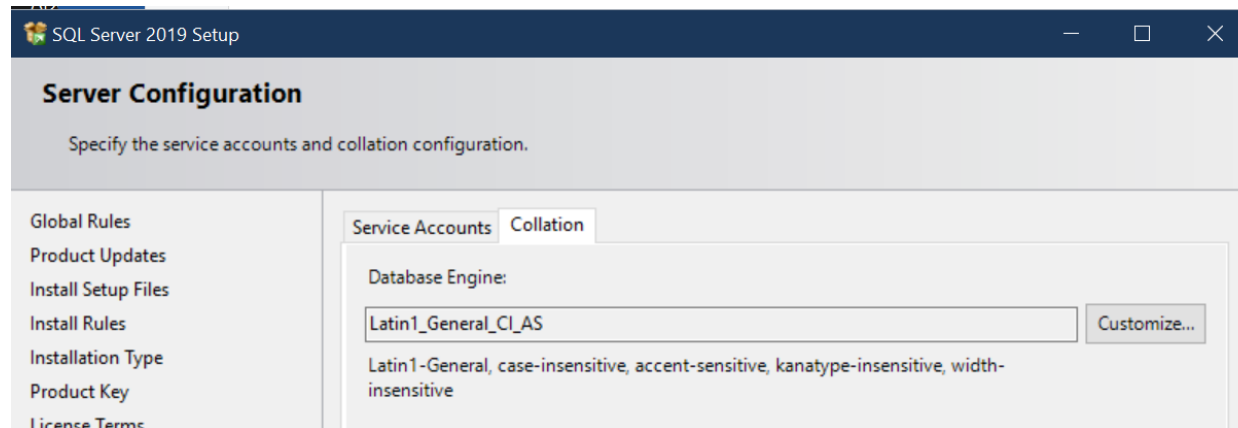
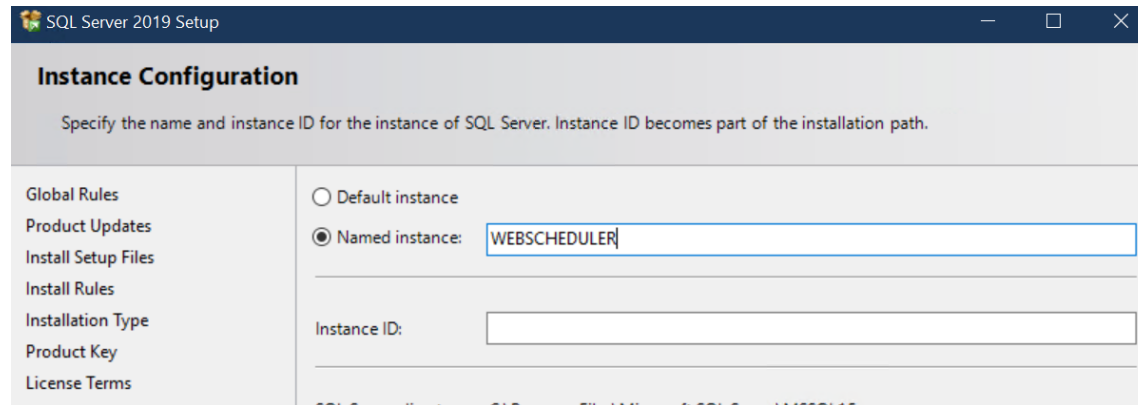
```
{
  "data": {
    "xtremX3Manufacturing": {
      "finiteSchedulerObject": {
        "maintain": [
          "0",
          "The Work orders successfully updated the Finite scheduler for site XXX."
        ]
      }
    }
  },
  "extensions": {
    "diagnoses": []
  }
}
```

Unfortunately, I’ve not been able to install the 2024 R1 version of Web Scheduling, so I’ve not been able to find the equivalent Mutation to test...

# Create an Instance of the Database

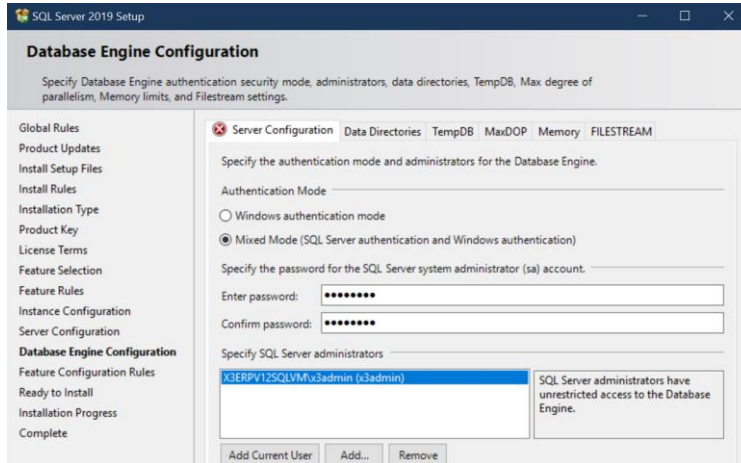
Create an instance of SQL Server or Oracle as appropriate – in our example, we'll use SQL Server

Web Scheduling holds its data in a dedicated instance of SQL or Oracle.

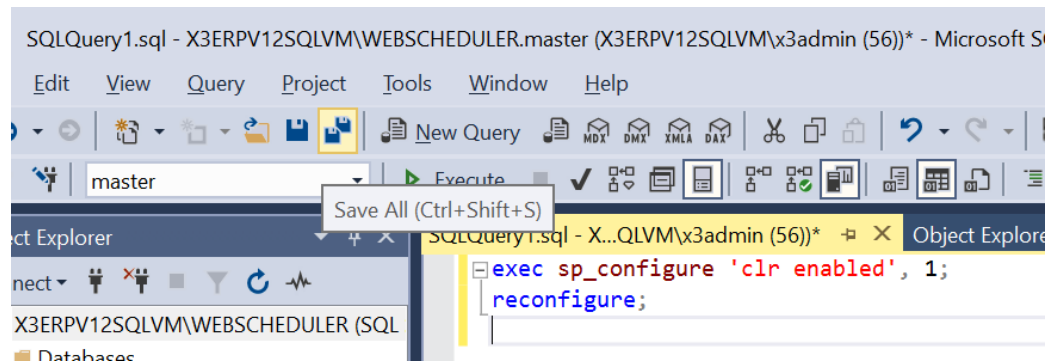


# Create an Instance of the Database

Ensure that the Windows Account installing Web Scheduling is an administrator in the SQL Instance.



Common Language Runtime (CLR) must be enabled (Exec sp\_configure 'clr enabled', 1;)



# Create an Instance of the Database

For SQL Server, ideally, set up a separate Database Administrator schema in the Web Scheduler instance – this can be used during the creation of all the Databases

To provide extra security, it's advisable to create a specific Database Administrator schema to do administration tasks in the Web Scheduling instance, rather than “sa”. In my case, the schema is “websh”.

It must have public and sysadmin rights, in order to create and populate the databases.

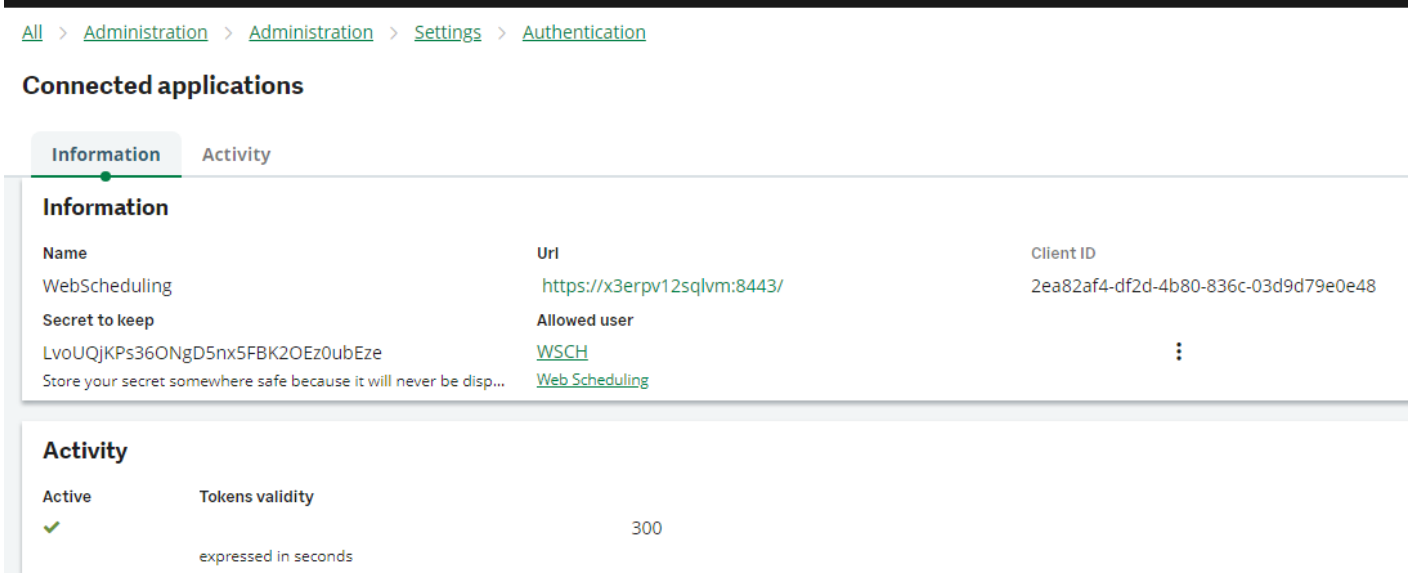
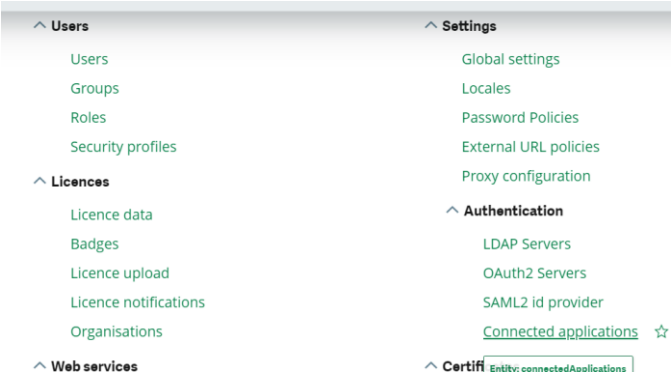
The image shows a sequence of three screenshots from SQL Server Enterprise Manager illustrating the creation and configuration of a login named 'websh'.

- Left Screenshot:** The 'Login - New' dialog box is open. The 'Login name' is 'websh'. 'SQL Server authentication' is selected. Passwords are masked with dots. The 'Enforce password policy' checkbox is checked.
- Middle Screenshot:** The 'Logins' folder in the server tree is expanded, showing a list of logins including 'sa' and the newly created 'websh'.
- Right Screenshot:** The 'Login Properties - websh' dialog box is open, showing the 'Server Roles' tab. The 'public' and 'sysadmin' roles are checked, while others like 'bulkadmin' and 'dbcreator' are unchecked.

# Create a Connected Application in X3

Set up a Connected Application entry for Web Scheduling – this will generate a “Client ID”/”Secret” pair to use during the installation of Web Scheduling.

Web Scheduling is a third-party application which requires a “Connected Application” to be set up to create a JSON Web Token (JWT) ClientID and Secret Key pair – these need to be recorded for use later, during the Web Scheduling installation process. I had to do a “Regenerate secret” to get the Secret Key to be displayed.



Client ID : 2ea82af4-df2d-4b80-836c-03d9d79e0e48

Secret Key : LvoUQjKPs36ONgD5nx5FBK20Ez0ubEze

# Create a Connected Application in X3

As part of my set-up, I've created a separate X3 User called WSCH which has ADMIN Profiles associated with it.

All > Administration > Administration > Users

Login Information Administration Explorer Custom locales

### Login

Login \*   Active

Authentication  
 Standard  
 DB  
 LDAP

New password \*   Password never expires

LDAP instance for synchronisation

LDAP directory

### Information

Title	First name	Last name *	Email	C
<input checked="" type="radio"/> Mr	<input type="text" value="Web"/>	<input type="text" value="Scheduler"/>	<input type="text"/>	<input type="text"/>

### Administration

Groups

Endpoints login

+

X3 user code	User login	Endpoint
<input type="button" value="⋮"/> WSCH	WSCH	X3ERP12 / SEED

All > Parameters > Users

⌵ ↑ ↓ ⌵ **Users**

Home General Organization Parameter definitions Access

Code \*  Name   A

### General

#### Identification

X3 connection  Web services connection

No directory check

Login \*    Trade code

Default warehouse

User menu profile

System administrator

User function profile

# Create a SOAP Pool in X3

Prior to 2024 R1, X3Services used X3 SOAP Web Services to apply GraphQL Mutations to the Sage X3 Database, and this necessitated the setting up of a SOAP Pool in X3.

The SOAP Pool used by X3Services was always the first one for the Folder being referenced by X3Services.

As the Pool is for X3Services in general, rather than Web Scheduling, I've given it the name "X3\_Services\_ADC".

[All](#) > [Administration](#) > [Administration](#) > [Web services](#)

### List of SOAP pools

Acti

Alias	Endpoint	Locale	User	Maximum size	Initialisation size	Auto start	Stopped manually	Unused lifetime (mn)	Lifetime (mn)	X3 run
<a href="#">X3_Services_ADC</a>	<a href="#">X3ERP12 / SEED</a>	<a href="#">English (United States)</a>	<a href="#">XTRM XTrem WS User</a>	2	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	720	
<a href="#">WMS</a>	<a href="#">X3ERP12 / SEED</a>	<a href="#">English (United Kingdom)</a>	<a href="#">admin Super administrator</a>	4	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	720	
<a href="#">GENERAL</a>	<a href="#">X3ERP12 / SEED</a>	<a href="#">English (United Kingdom)</a>	<a href="#">admin Super administrator</a>	4	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	720	



# Installation

# Installation of Web Scheduler

The Web Scheduling installer provides a single installer to install all the required Web Sites and Database components.

It also allows you to export and import the values used during the installation – this is a good way to document the installation and also to repeat it if necessary.

In addition, the file could be amended prior to importation – for example, if the SSL Certificate has changed or the Connected Application “Secret” is re-generated. It could also be used as the basis of a “template” to be used to roll Web Scheduling out to multiple sites based on the same layout but just modified to suit the environment (for example, server-names and ports).

Regarding configuring Web Scheduling with SSL Certificates, the following Knowledge Base article is available:

[Procedure to convert sedApta suite from HTTP to HTTPS \(sedApta suite 2021 UP1 & 119.X\)-1 \(1\).pdf](#)

# Installation of Web Scheduler

In order to take advantage of the new GraphQL Interface, you need to download

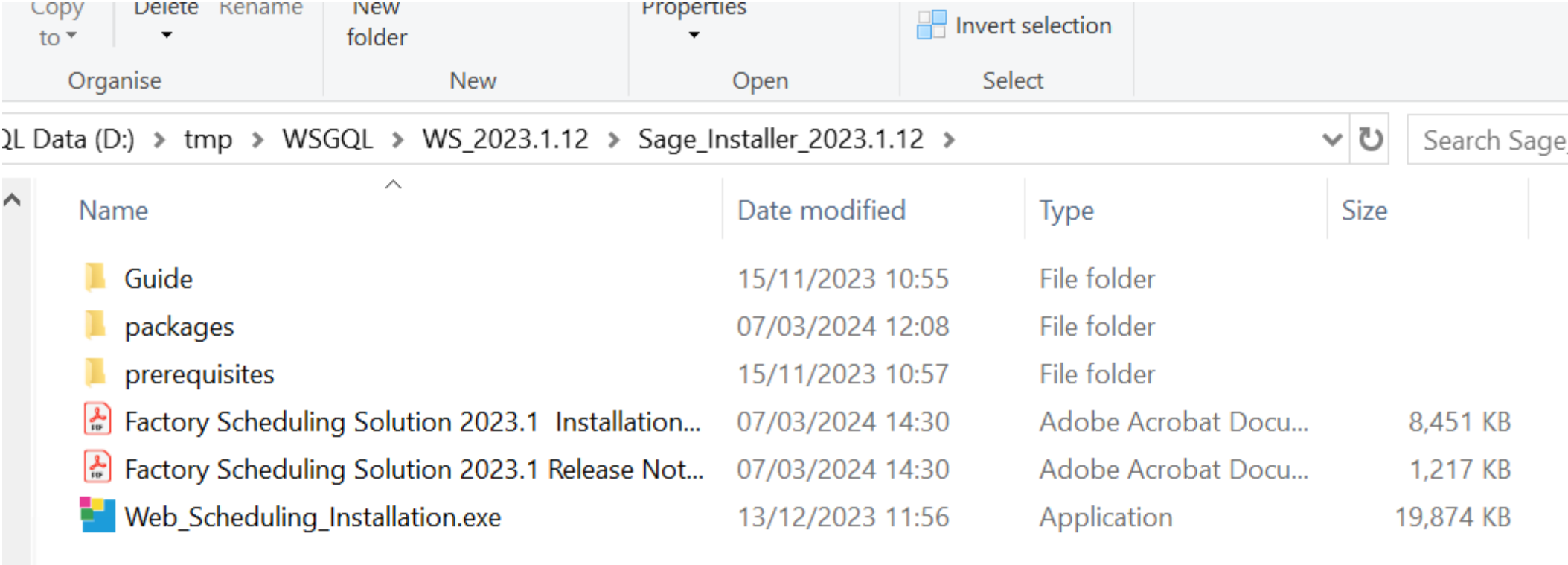
Sage\_Installer\_2023\_GraphQL\_Packages.zip and Sage\_Installer\_2023\_GraphQL\_prerequisites.zip archives for 2023 R1

Sage\_Installer\_2023.1.12 for 2023 R2

Sage\_Installer\_? for 2024 R1

# Installation of Web Scheduler

For the purposes of this exercise, I am installing 2023.1.12 on a 2023 R2 system.



The screenshot shows a Windows File Explorer window with the following details:

- Address Bar:** ZL Data (D:) > tmp > WSQL > WS\_2023.1.12 > Sage\_Installer\_2023.1.12
- Navigation Buttons:** Organise, New, Open, Select, Invert selection
- Table of Files and Folders:**

Name	Date modified	Type	Size
Guide	15/11/2023 10:55	File folder	
packages	07/03/2024 12:08	File folder	
prerequisites	15/11/2023 10:57	File folder	
Factory Scheduling Solution 2023.1 Installation...	07/03/2024 14:30	Adobe Acrobat Docu...	8,451 KB
Factory Scheduling Solution 2023.1 Release Not...	07/03/2024 14:30	Adobe Acrobat Docu...	1,217 KB
Web_Scheduling_Installation.exe	13/12/2023 11:56	Application	19,874 KB

# Installation of Web Scheduler

If you're using an existing config.ini by importing it, remember to make sure all the components are ticked in the left-hand pane – on my system, it doesn't tick "Factory Scheduling" or "Access Control Manager"

Installable (17)

### Manufacturing Operations Management

- Factory Scheduling**  
Production and resources scheduling

---

### OSA

- Analytics**  
Measure your process performances

---

### X3

- X3 Interface**

### Installation details

- Access Control Manager**  
 Access Control Manager *Version: 11.23.3.4*
- Analytics**  
 Analytics *Version: 11.23.3.4*
- Base Services**
  - Configuration Manager *Version: 11.23.3.3*
  - License Manager *Version: 11.23.3.2*
  - Company Chart Service *Version: 11.23.3.7*
  - Notification Engine *Version: 11.23.3.2*
  - Unit of Measurement for MoM *Version: 11.23.3.1*
  - Procedure Launcher *Version: 11.23.3.4*
- Bricks**
  - Widget Editor *Version: 11.23.3.29*
  - Entity Manager Bricks *Version: 11.23.3.29*
- Database**
  - MOM Database *Version: 11.23.3.8*
- Scripts**
  - MOM Scripts *Version: 11.23.3.8*
- Utility**

Total space required: 5,972.18MB

Advanced Mode

By clicking Install, you agree to our [Terms](#) and that you have read our [Conditions](#)

# Installation of Web Scheduler

During the installation process, I've used the "websh" schema rather than "sa" or separate schemas for each Database for all the Databases.

For the Company Chart, ACM and MOM Databases, "Use existing user, create database and run initialization script" action

A screenshot of a configuration form. On the left, there are three labels: "Action on Database", "Authentication", and "Login". To the right of "Action on Database" is a dropdown menu. The dropdown is open, showing two options: "Use existing user, create database and run initialization script" and "Use existing user, create database and don't run initialization script". To the right of the dropdown is a "Test" button. Below the "Authentication" label, the text "websh" is visible, likely indicating the selected schema.

For Analytic, Notification Engine, Bricks, Configuration Manager Databases, use "Use existing user and create database" action

A screenshot of a configuration form. On the left, there is a label "Action on Database". To the right is a dropdown menu with the text "Use existing user and create database" selected. Below the dropdown is a horizontal line, and to the right of the line is a small L-shaped corner icon.

# Installation of Web Scheduler

On the ACM Security Settings, the Certificate Thumbprint needs to be specified – pick “Custom” and then paste the Thumbprint in

## ACM Security Settings

### Signing Certificate Thumbprint

Represents the thumbprint of the signing certificate.

Current User

X3ERP12SQLVM\x3admin

Certificate

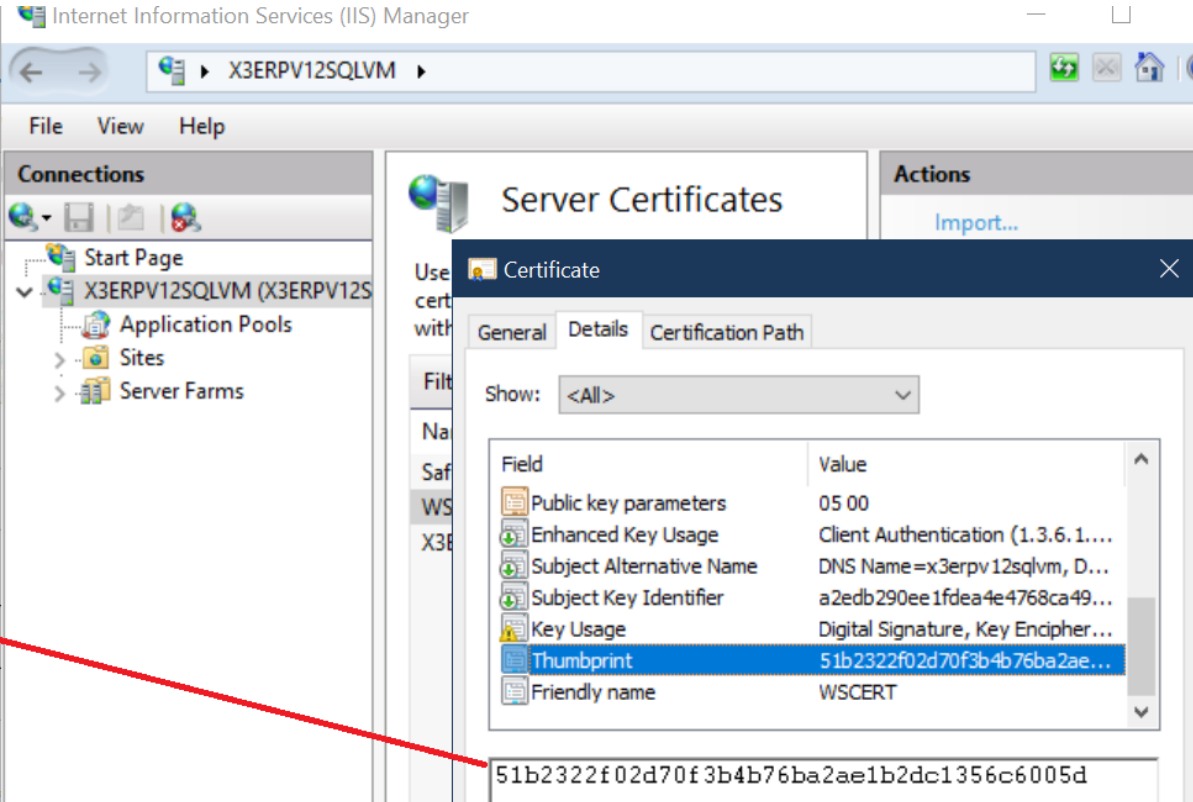
Custom

Thumbprint

51b2322f02d70f3b4b76ba2ae1b2dc1356c6005d

### Enable Multi Factor Authentication (MFA)

Check if you want to enable the Multi Factor Authentication (MFA), uncheck to disable it for e



# Installation of Web Scheduler

With 2023 R1 and beyond, the installer prompts for details of the GraphQL Interface as well as the “old” JSON Interface

## X3 Interface Installation

### *Installation folder*

Select the location in which to install X3 Interface Service

Path

D:\sedApta\SupplyChain\X3\_Interface\_GraphQL

### *Installation folder old Interface*

Select the location in which to install the old X3 Interface Service

Path

D:\sedApta\SupplyChain\X3\_Interface

### *X3 URL GraphQL*

X3 URL GraphQL

X3 URL GraphQL

https://x3erpv12sqlvm:8443/xtrem/api



# Installation of Web Scheduler

**GOTCHAS :** Specify the X3 Solution and Endpoint Name, rather than the actual Server Name and Folder Name

**X3 Server**  
X3 Server

X3 Server

---

**X3 Endpoint**  
X3 Endpoint

X3 Endpoint

---

**X3 Username**  
X3 Username used for Bearer Authentication

X3 Username used for Bearer Authentication

[All](#) > [Administration](#) > [Administration](#) > [Endpoints](#)

### X3 solutions

Code	Description
X3ERP12	X3.ERP.V12 on X3ERP12SQLVM.(W2)

[All](#) > [Administration](#) > [Administration](#) > [Endpoints](#)

### Endpoints

Name	Description	Application
syracuse	Syracuse administration	Syracuse Collaboration
X3ERP12_SEED	X3ERP12 / SEED	X3.ERP
X3ERP12_X3	X3ERP12 / X3	X3.ERP

# Installation of Web Scheduler

You must provide the Client ID and Secret Keys for JWT which were previously set up in “Connected Application” during the Pre-requisite stage of the Installation.

### X3 Client Id

X3 Client Id used for Bearer Authentication

X3 Client Id used for Bearer Authentication

2ea82af4-df2d-4b80-836c-03d9d79e0e48

### X3 Secret

X3 Secret used for Bearer Authentication

X3 Secret used for Bearer Authentication

LvoUQjKPs36ONgD5nx5FBK2OEz0ubEze

[All](#) > [Administration](#) > [Administration](#) > [Settings](#) > [Authentication](#)

### Connected applications

**Information**    Activity

Information		
Name	Uri	Client ID
WebScheduling	<a href="https://x3erpv12sqlvm:8443/">https://x3erpv12sqlvm:8443/</a>	2ea82af4-df2d-4b80-836c-03d9d79e0e48
Secret to keep	Allowed user	
LvoUQjKPs36ONgD5nx5FBK2OEz0ubEze	<a href="#">WSCH</a>	⋮
Store your secret somewhere safe because it will never be disp...	<a href="#">Web Scheduling</a>	

**Activity**

Active	Tokens validity	300
✓	expressed in seconds	

# Installation of Web Scheduler

A final part of the Interface set-up is to include the Certificate Thumbprint.

## *Certificate HashCode*

Represents the thumbprint of the signing certificate.

Current User

X3ERPV12SQLVM\x3admin

Certificate

Custom

Thumbprint

51b2322f02d70f3b4b76ba2ae1b2dc1356c6005d

# Installation of Web Scheduler

Finally, export the configuration, partly as documentation as well as to repeat the installation if required and as a template.

Even screen-shot this page as part of the documentation.

## Export current Configuration

File Path:

### Configurations:

#### Supply Chain Base Package (Full) properties:

Suite Installation Folder D:\sedApta\SupplyChain

#### Database Base properties:

Database script folder D:\sedApta\Database\Scripts

#### Agent Configuration Manager properties:

Installation folders D:\sedApta\Shared\Configuration\Agent

#### Company Chart Service properties:

Installation folders D:\sedApta\Shared\CompanyChart

Company Chart Endpoint URL: https://X3ERP12SQLVM/CompanyChart

CompanyChart

Company Chart Service

IsSQLDatabase true

LiteDb storage true

Storage Connection String D:\sedApta\Shared\CompanyChart\Storage\CompanyChartDb.db

DatabaseName CompanyChartServiceDb

# Post Installation tasks

Check through the Installation log-file in C:\ProgramData\sedApta\logs\installer to make sure there are no hidden issues – look for [ERROR], and the only ones should be where the installer doesn't find the installation folders.

If all the pre-requisites have been done, the installation should run smoothly, and the following Windows Services should now be in place:

Name	Description	Status	Startup Ty
Safe X3 Agent Syracuse Serv...	Safe X3 Age...	Running	Automatic
Safe X3 MongoDB MONGO01	Safe X3 Mon...	Running	Automatic
Safe X3 Syracuse Server NO...	Safe X3 Syra...	Running	Manual
Safe_X3_SrvEdt_V2_EDT_DEF...	Sage Safe X3...	Running	Automatic
Sage Safe X3 AdxAdmin		Running	Automatic
Sage X3 Documentation - X...	Documentat...		Manual
Sage X3 Interface GraphQL	Sage X3 Inte...	Disabled	Disabled
Sage X3 Services	Sage X3 Serv...	Running	Automatic
Sage_X3_Interface	Sage_X3_Int...	Running	Automatic
SageX3_Java_Bridge_Server_...	SageX3_Java...		Manual
SageX3_WEB_apachehttpd_...	Apache/2.4.4...		Manual
SageX3_WEB_apachetomcat...	SageX3_WE...		Manual
Secondary Log-on	Enables start...		Manual
Secure Socket Tunneling Pro...	Provides sup...	Running	Manual
Security Accounts Manager	The startup ...	Running	Automatic
sedApta ACM Service	sedApta AC...	Running	Automatic
sedApta Agent Configuratio...	sedApta Age...	Running	Automatic
SedApta Factory Scheduling ...	SedApta Fac...	Running	Automatic
sedApta Notification Engine...	sedApta Not...	Running	Automatic
Sensor Data Service	Delivers dat...		Disabled

# Post Installation tasks

As we're going to be using the new GraphQL Interface, the JSON "Sage\_X3\_Interface" service should be stopped and disabled, and the new "Sage X3 Interface GraphQL" service should be enabled and started.

You may want to check the log-files in C:\ProgramData\sedApta\logs\notification\_engine\service\DEFAULT – if Notification Engine hasn't been configured correctly, the number of log-files can get large. **It might be worth stopping and disabling the sedApta Notification Engine Service and reviewing the configuration at a later stage or leaving it at stopped.**

Check that all the databases have been created and that fundamental tables such as dbo.S\_WRK\_WORKGROUP in NICIM have been pre-populated by the installer

```
SELECT TOP (1000) [WORKGROUP_CODE]
, [WORKGROUP_DESCR]
, [STRUCTUREGROUP_CODE]
FROM [NICIM].[dbo].[S_WRK_WORKGROUP]
```

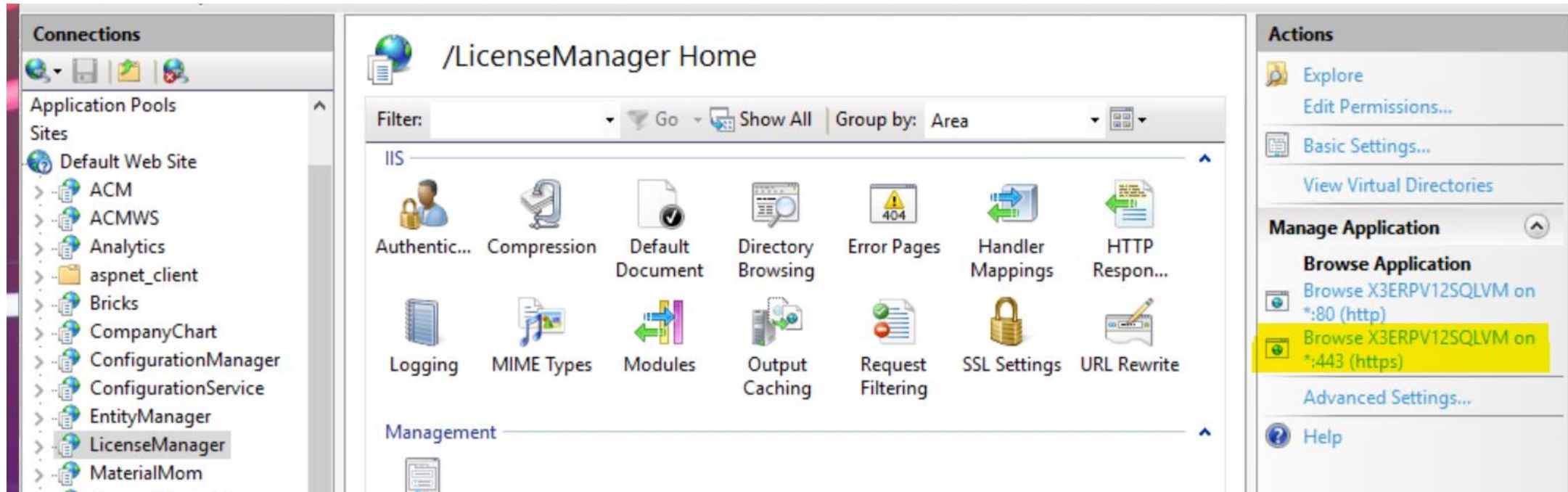
100 %

Results Messages

	WORKGROUP_CODE	WORKGROUP_DESCR	STRUCTUREGROUP_CODE
1	Global	Global	GlobalStructureGroup
2	SAGE	SAGE	GlobalStructureGroup

# Post Installation tasks

Confirm that all the URLs work – probably easiest to launch them via IIS and pick the https option.



It's probably worth book-marking them as well...

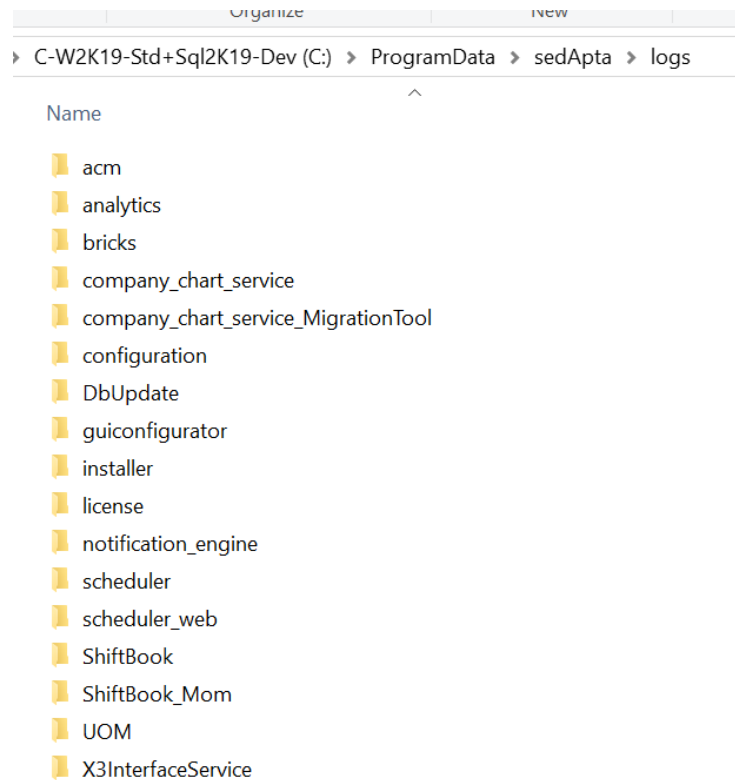
# Getting started



# Logs, logs, logs!

Fortunately, Web Scheduling has quite a few locations for log-files for its components.

Here is the list of the folders contained in C:/ProgramData/sedApta/logs/:



# Logs, logs, logs!

Don't forget the logs from other components involved in the environment – notably, the Syracuse logs and also the GraphQL/Xtrem logs

[Troubleshooting X3 Services issues \(New ADC\) \(sage.com\)](#)

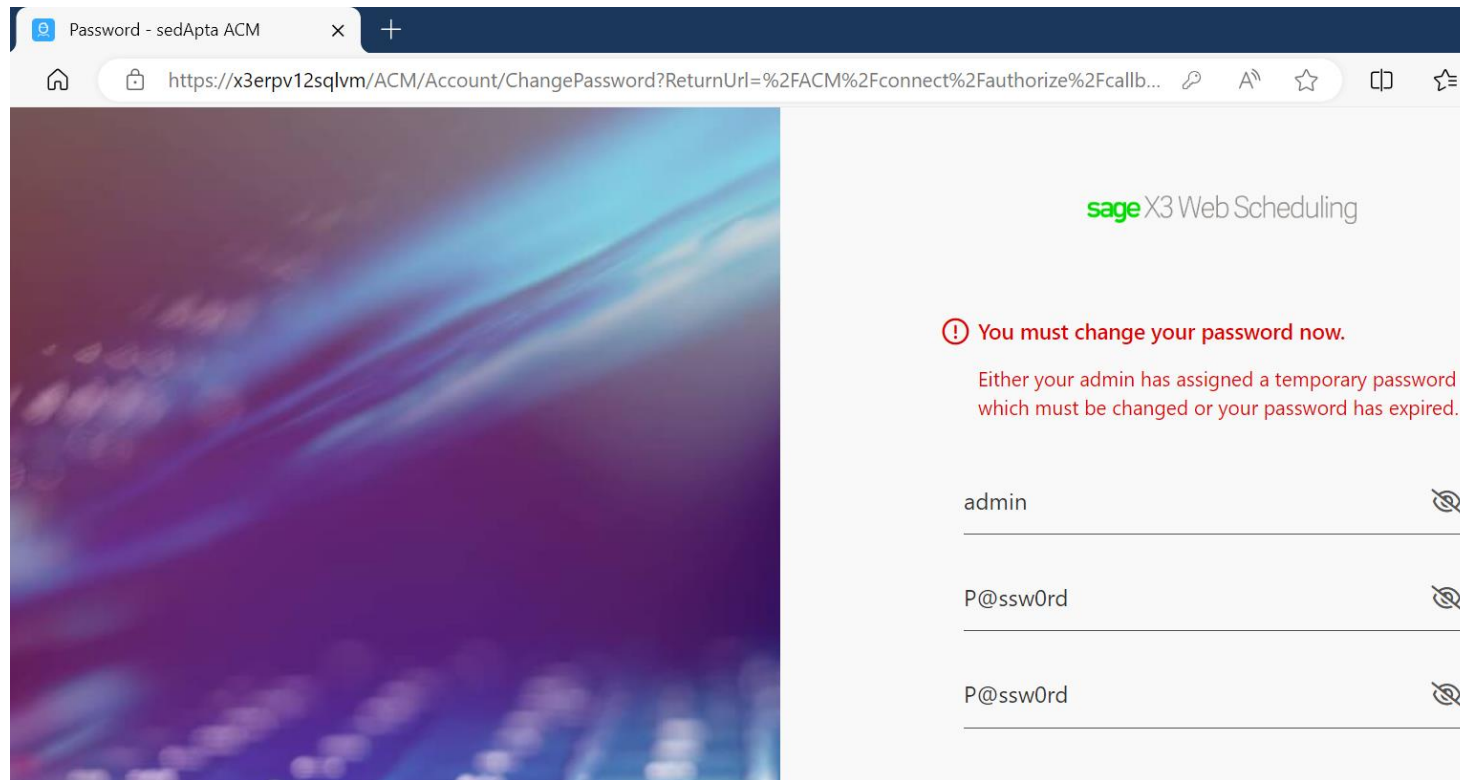
[Producing Log Files in Sage X3 - Sage X3 UK Support & Insights - Sage X3 UK - Community Hub](#)

If the problem you're investigating involves an update to the X3 Database, then this will be covered by a Mutation which will call a SOAP Web Service in Releases prior to 2024 R1, or the invocation of an Import Template or Sub-program for 2024 R1 and above.

# First thing's first.

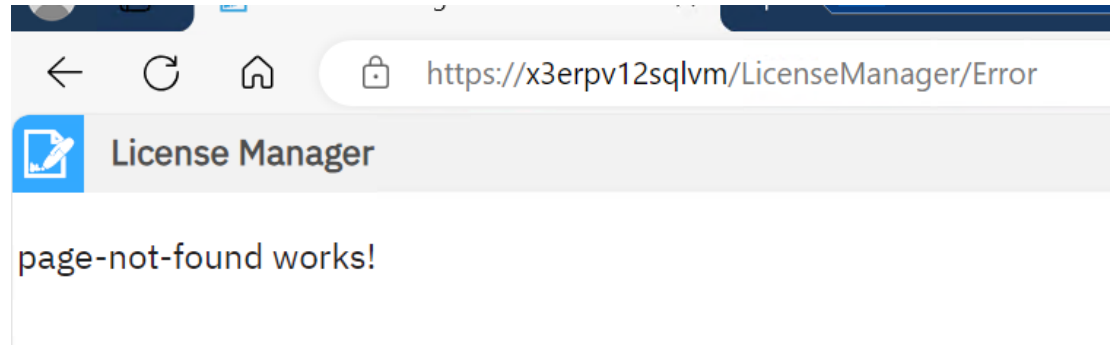
Once the system is up-and-running, there are a few tasks that need carrying-out:

Apply a License – try launching LicenseManager and it re-directs to the ACM Login page and asks for a new Password. I decided to use “P@ssw0rd”

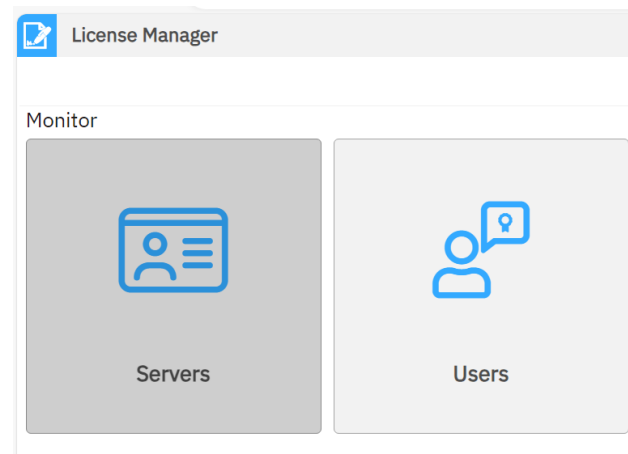
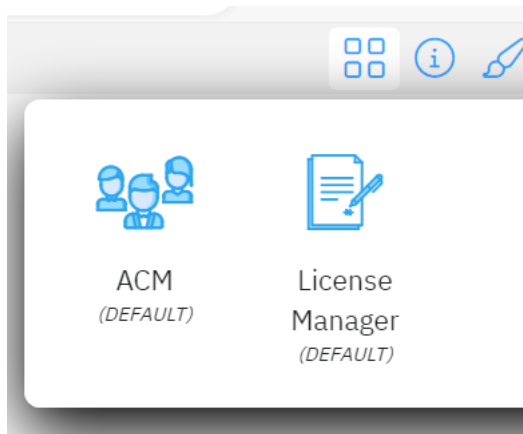


# First thing's first.

After creating a new Password, I clicked ok and got

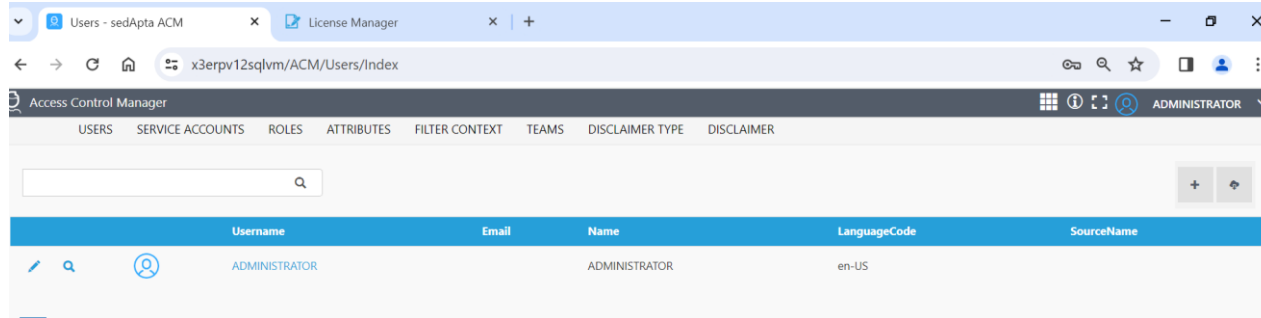


I clicked on the menu and selected License Manager and it launched a new tab – note that it only offers “Monitor” – you can’t add a License.



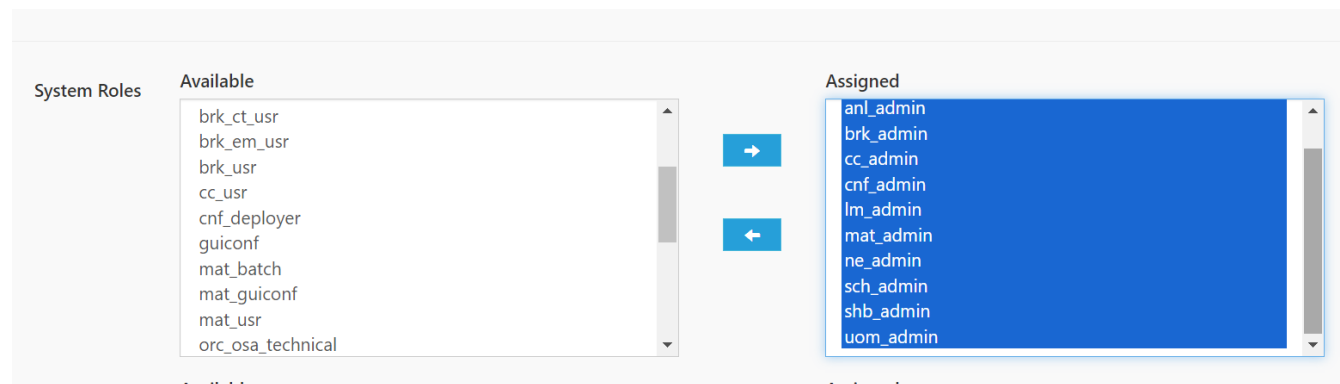
# First thing's first.

First of all, you need to add “System Roles” to “administrator” and that’s done in ACM



Assign the following Roles to Administrator for starters: lm\_admin, cc\_admin and cnf\_admin.

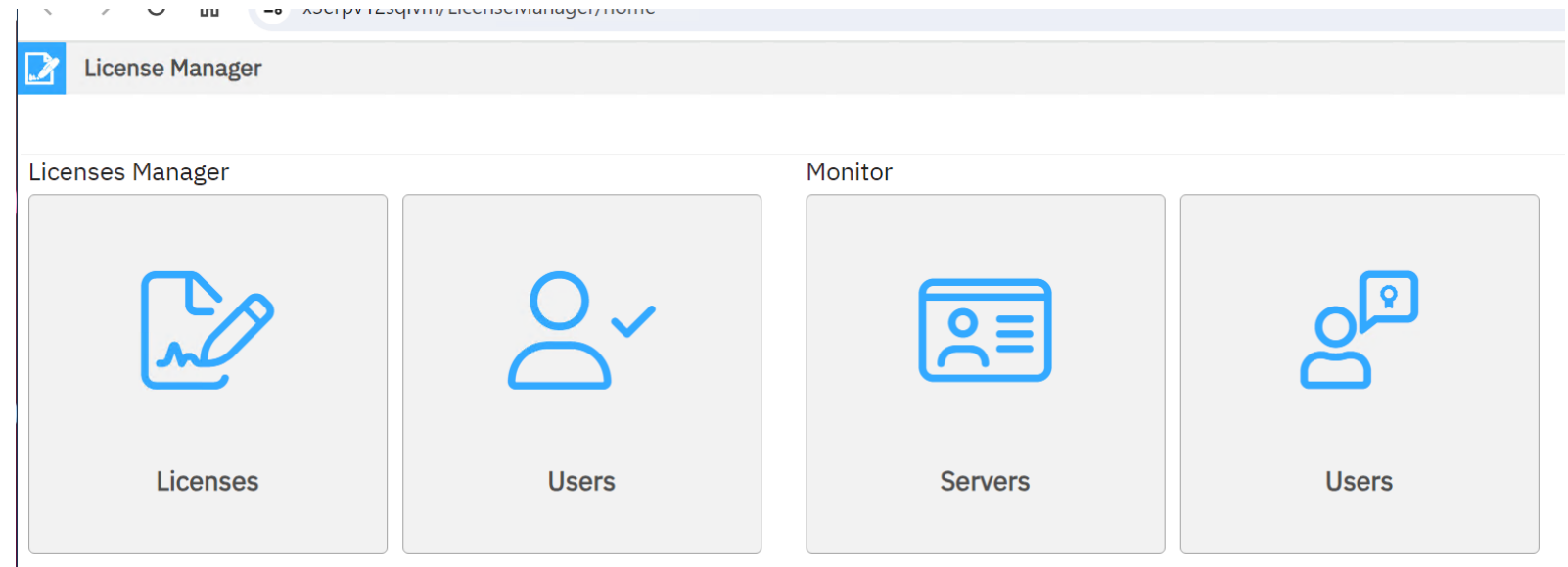
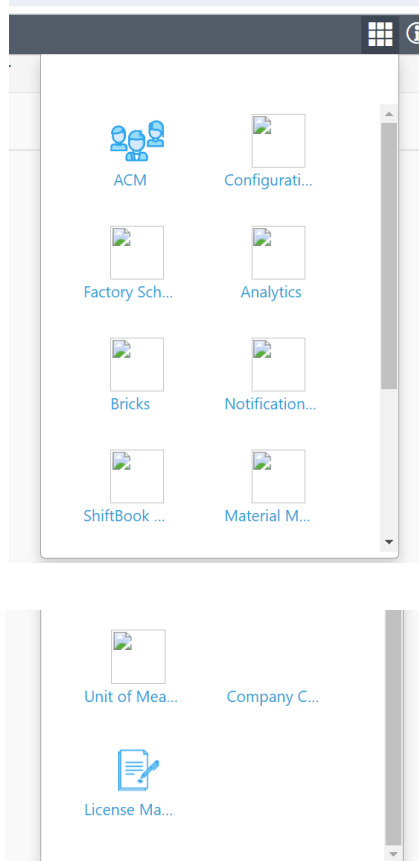
In fact, I added all the admin Roles to Administrator for simplicity's sake: Acm\_admin, anl\_admin, brk\_admin, cc\_admin, lm\_admin, mat\_admin, ne\_admin, sch\_admin, shb\_admin and uom\_admin



# First thing's first.

Once you've selected the Roles, you can now select the components from the menu.

After logging out and back in to License Manager, you will be able to manage/add the license.

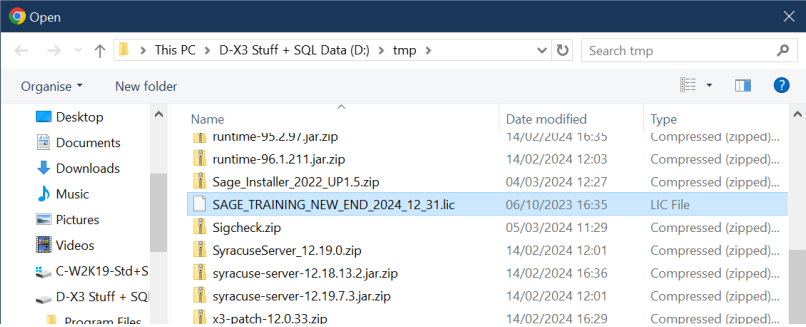


# First thing's first.

Apply the License and see what “Product code” licenses are available:

Add - Assigned license

[select Licenses](#)



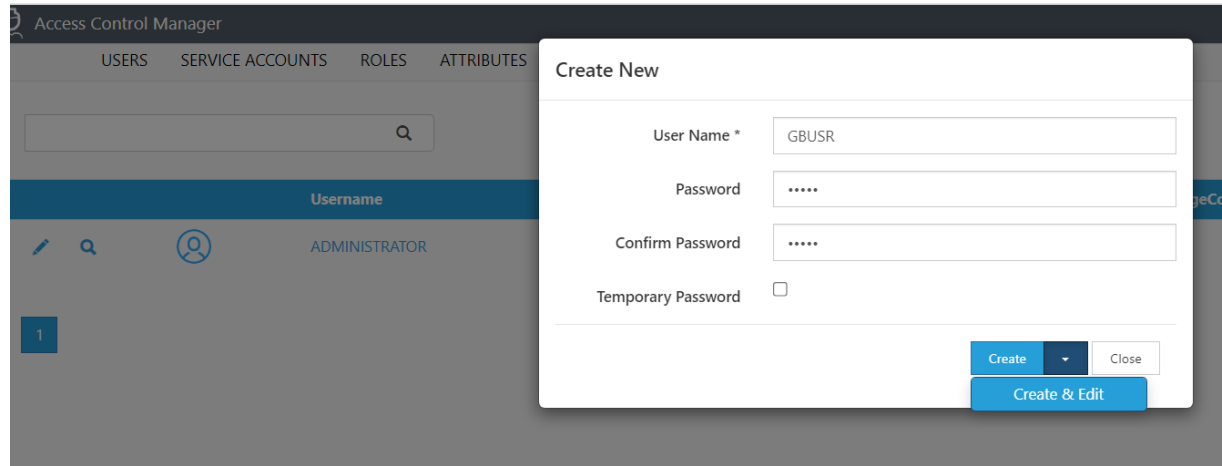
License Manager > Licenses

Name	State	Expiration Date
SAGE_TRAINING_NEW_END_2024_12_31	Active	Dec 31, 2024

Product code	Description	Quantity	Type	Type
BR_USER_VIEWER	Analytics Bricks - User Viewer	10	User	Named
AN_USER_VIEWER	Analytics - User Viewer	5	User	Named
SKD_SED	Scheduler web - automatic scheduling (SED)	5	User	Named
SKD_USER	Scheduler web	5	User	Named
PEM_USER	Process Equipment - USER	5	User	Named
WSM_USER	Workforce Scheduling Management	5	User	Named
BR_USER_EM	Analytics Bricks - User EM	5	User	Named
AN_USER_ADMIN	Analytics - User Administrator	1	User	Named
BR_USER_ADMIN	Analytics Bricks - User Administrator	1	User	Named
PEM_SERVER_WEB	Process Equipment - SERVER	1	Server	Floating
BR_SERVER	Analytics Bricks - SERVER	1	Server	Floating
PEM_SERVER	Process Equipment - SERVER	1	Server	Floating
NICIM_SERVER	NICIM SERVER	6	Server	Floating
EM_SERVER	Entity Manager - Server	1	Server	Floating
MAT_SERVER	Material - WebApi	1	Server	Floating
MAT_SERVER_WEBAPI	Material - Presentation	1	Server	Floating
SHB_SERVER	SHB - WebApi	1	Server	Floating
SHB_SERVER_WEBAPI	SHB - Presentation	1	Server	Floating
RCP_SERVER	Recipe - WebApi	1	Server	Floating
RCP_SERVER_WEBAPI	Recipe - Presentation	1	Server	Floating

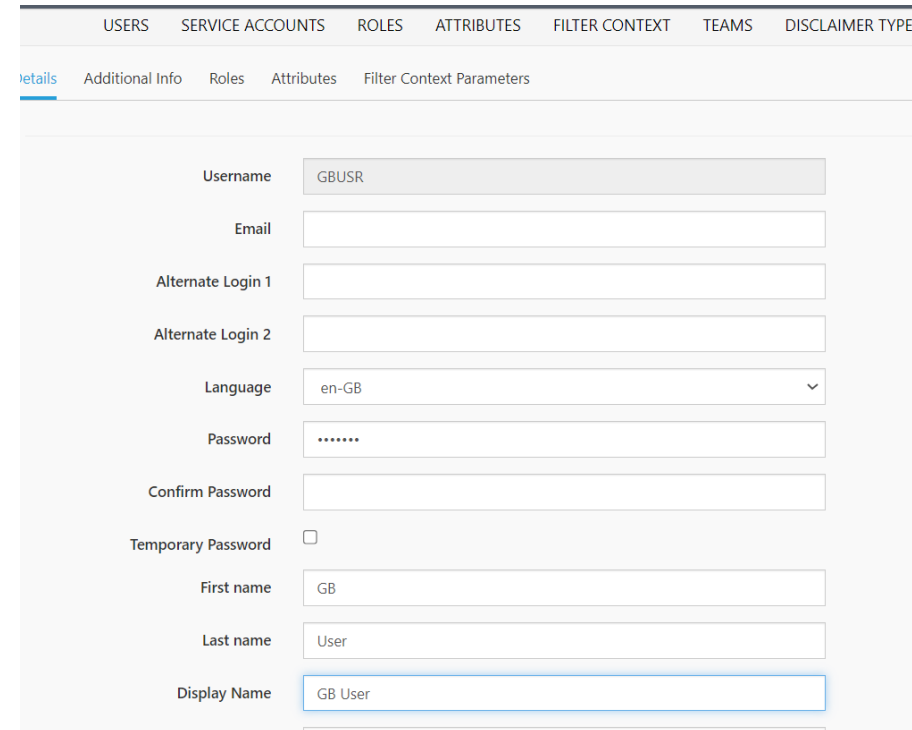
# First thing's first.

Now, start creating some Users. In my case, I'm creating "GBUSR" (with password "G8\_ws\_us3r!") which will eventually have access to all the GB Sites.



The screenshot shows the 'Create New' dialog box in the Access Control Manager. The dialog has a title bar 'Create New' and contains the following fields and controls:

- User Name \*: GBUSR
- Password: [masked with dots]
- Confirm Password: [masked with dots]
- Temporary Password:
- Buttons: Create, Close, and a prominent blue 'Create & Edit' button.



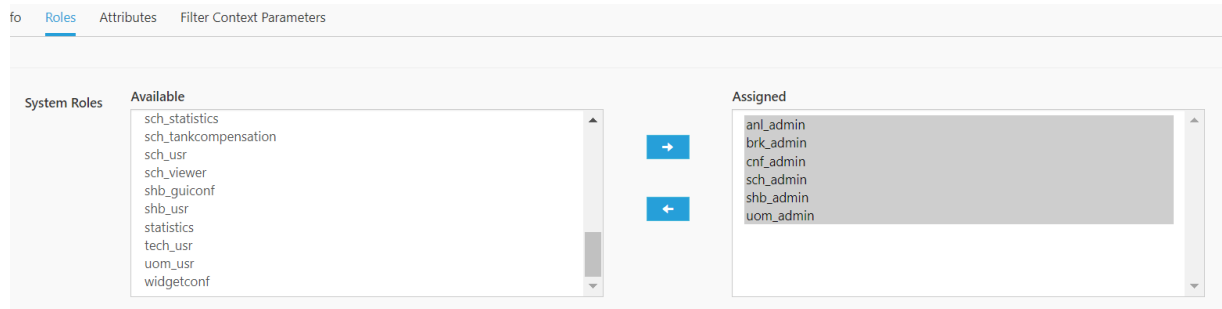
The screenshot shows the 'details' page for the user 'GBUSR' in the Access Control Manager. The page has a navigation bar with tabs: USERS, SERVICE ACCOUNTS, ROLES, ATTRIBUTES, FILTER CONTEXT, TEAMS, and DISCLAIMER TYPE. Below the navigation bar are sub-tabs: details, Additional Info, Roles, Attributes, and Filter Context Parameters. The main content area contains the following fields:

- Username: GBUSR
- Email: [empty]
- Alternate Login 1: [empty]
- Alternate Login 2: [empty]
- Language: en-GB
- Password: [masked with dots]
- Confirm Password: [empty]
- Temporary Password:
- First name: GB
- Last name: User
- Display Name: GB User

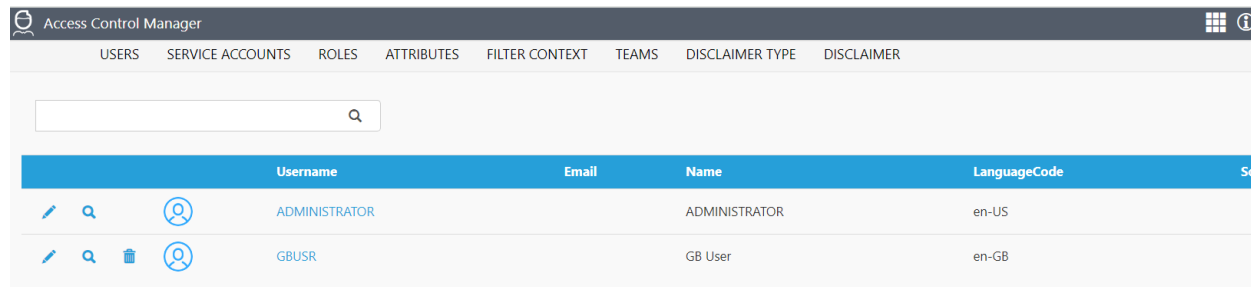


# First thing's first.

Assign reduced Roles

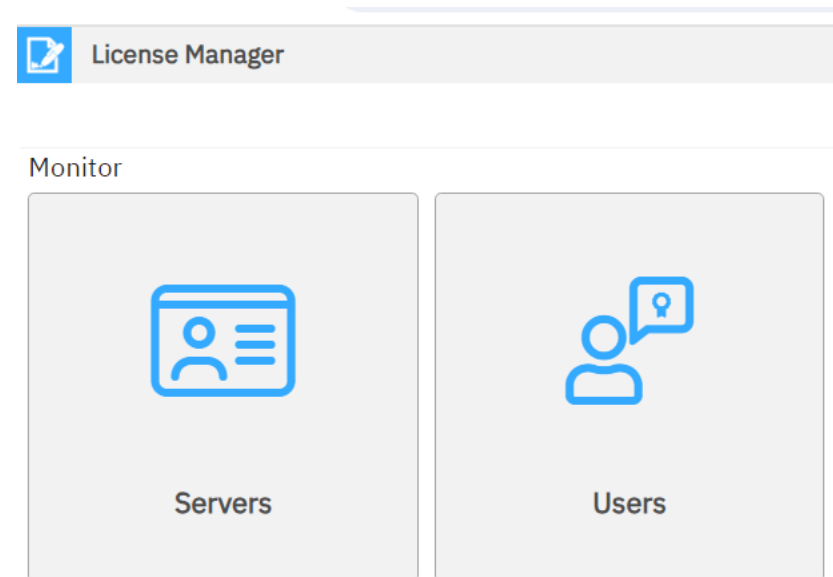
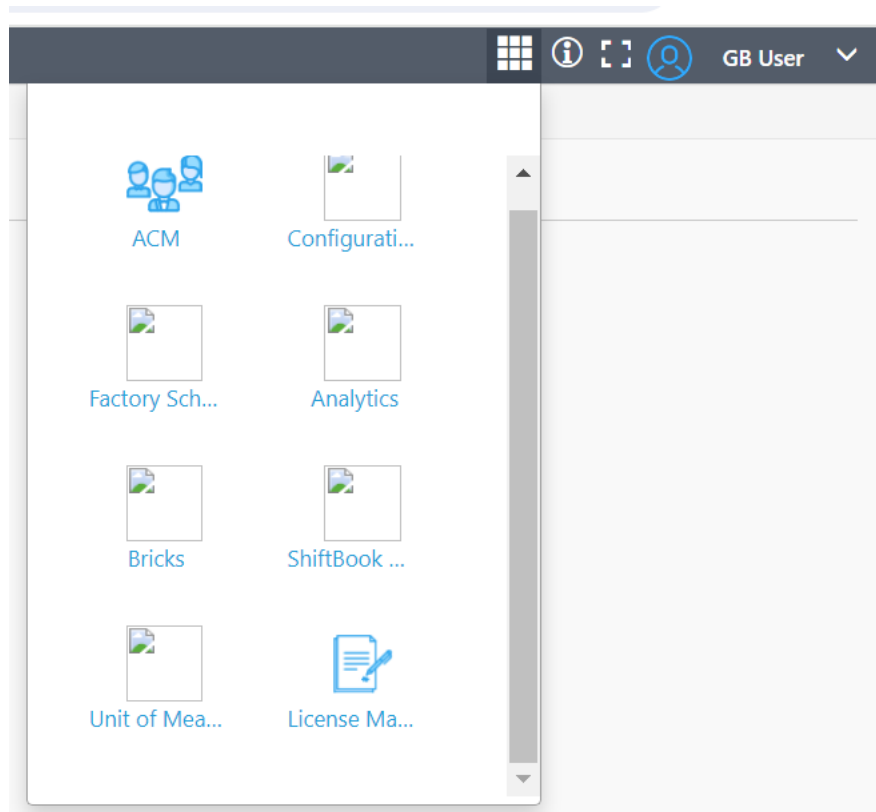


Now two Users listed in ACM



# First thing's first.

Log out of all components, ACM and Licence Manager, and log in as GBUSER to check access rights – note that it doesn't have admin rights for Licensing.



# First thing's first.

Back in LicenseManager, add administrator and GBUSR Users in License manager > Users tile and add the appropriate “Product codes” for each User:

Br_user_viewer	Analytics Bricks – Viewer
An_user_viewer	Analytics – User Viewer
Skd_sed	Scheduler web – automatic scheduling (SED)
Skd_user	Scheduler web
Wsm_user	Workforce Scheduling Management User
Br_user_em	Analytics Bricks – User EM
An_user_admin	Analytics – Administrator
Br_user_admin	Analytics Bricks – Administrator

License Manager > Users

User name

ADMINISTRATOR

Product code

- br\_user\_viewer
- an\_user\_viewer
- skd\_sed
- skd\_user
- wsm\_user
- br\_user\_em
- an\_user\_admin
- br\_user\_admin

Priority

License Manager > Users

User name

+ ADMINISTRATOR

GBUSR

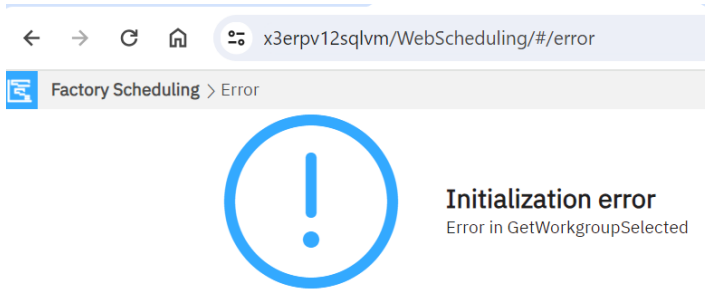
Product code

- br\_user\_viewer
- an\_user\_viewer
- skd\_user
- wsm\_user
- br\_user\_em

Priority

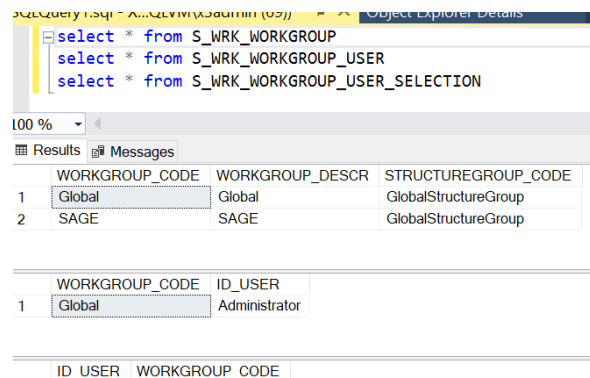
# First thing's first.

As Administrator, launch Factory Scheduling from the grid in ACM, and it returns



This is because there are no records in S\_WRK\_WORKGROUP\_USER and S\_WRK\_WORKGROUP\_USER\_SELECTION within NICIM Database.

Manually add a record in S\_WRK\_WORKGROUP\_USER and S\_WRK\_WORKGROUP\_USER\_SELECTION for Administrator

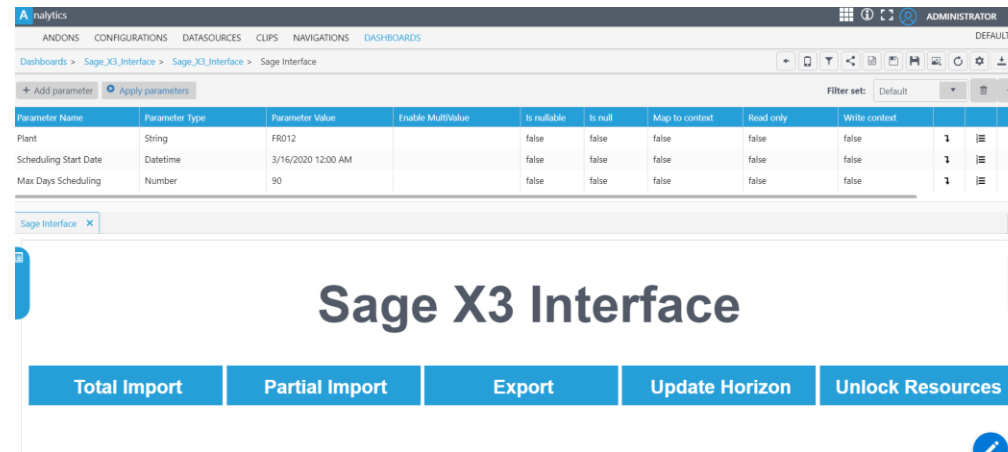
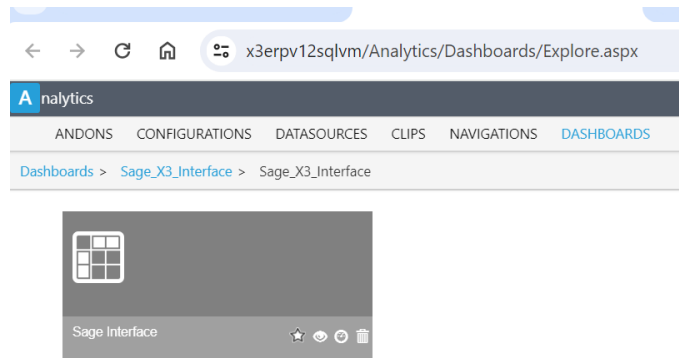


# First thing's first.

## Analytics

The Analytics component is the one which allows Web Scheduling to interact with the X3 Database via the JSON or GraphQL Interface.

Launch Analytics and log in as Administrator – you should be able to select “Sage Interface” and then drill-into it to get the options to Import, Export, Update Horizon or Unlock Resources



# First things first.

Web Scheduling bases its view of Products, Works Orders etc on X3's Work Centres – data is shared between Web Scheduling and X3 by

Total Imports – all the data for a selected X3 Site is imported into Web Scheduling

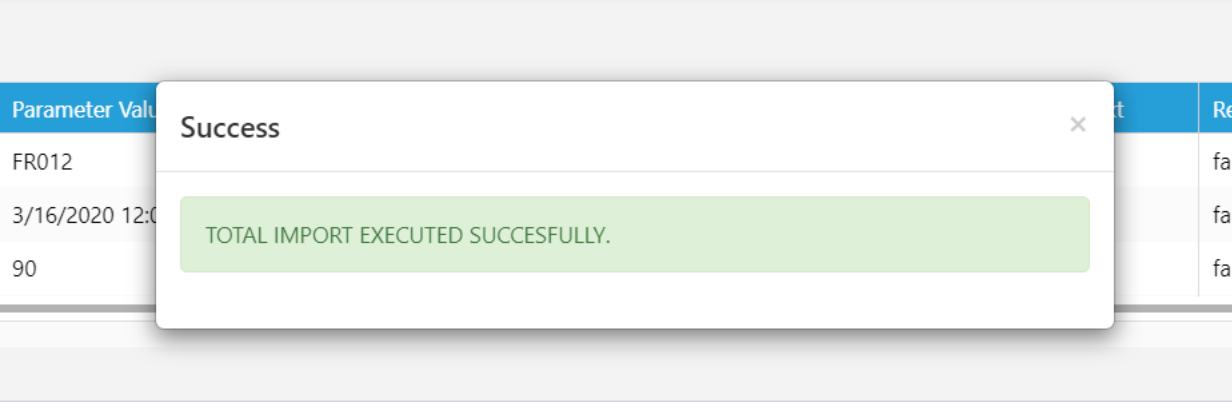
Partial Imports – any data which has been updated in X3 since the last Import is imported into Web Scheduling

Export – Operation and Works Order data in Web Scheduling can be transferred back to X3

Update Horizon – Update the Scheduler Horizon.

Unlock Resources – Unlock resources/machines

## Run the Total Import of FR012



	WORKGROUP_CODE	WORKGROUP_DESCR	STRUCTUREGROUP_CODE
1	FR012	FR012	GlobalStructureGroup
2	Global	Global	GlobalStructureGroup
3	SAGE	SAGE	GlobalStructureGroup

	WORKGROUP_CODE	ID_USER
1	FR012	FR012
2	Global	Administrator

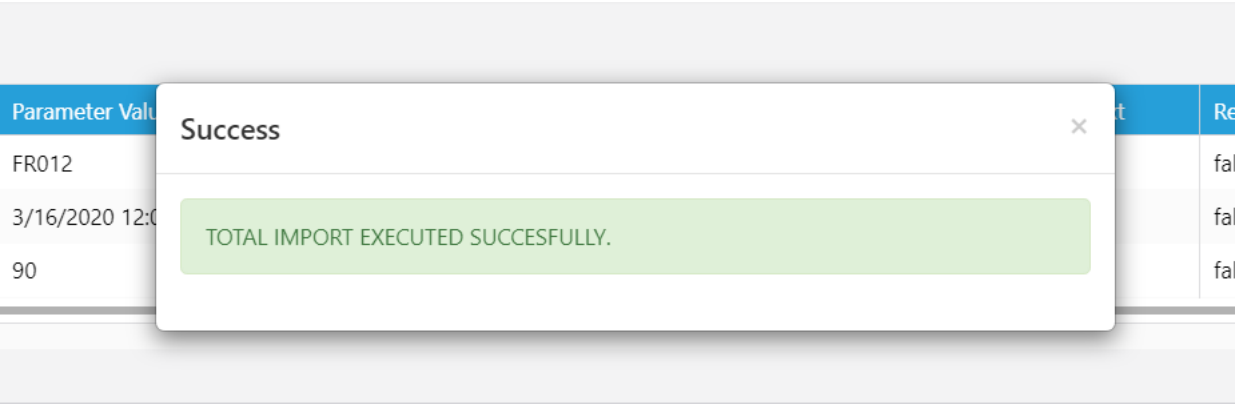
  

ID_USER	WORKGROUP_CODE
---------	----------------

# First things first.

When a Total Import is run for a “Plant” FR012, Web Scheduling imports the X3 Data for the Work Centre FR012 and creates a Web Scheduling Work Group with reference to a User FR012 – that User’s not actually created in the ACNDB.dbo.ACM\_Users table, but it’s all ready to allow access to the one Work Group if you add a User in ACM.

The Import also creates a list of Machines relating to a Work Group in dbo.S\_WRK\_GROUP\_STRUCTURE.



```

SQLQuery2.sql - X...QLVM\X3admin (54) | SQLQuery1.sql - X...QLVM\X3ac
select * from dbo.S_WRK_WORKGROUP
select * from dbo.S_WRK_WORKGROUP_USER
select * from dbo.S_WRK_WORKGROUP_STRUCTURE

```

WORKGROUP_CODE	WORKGROUP_DESCR	STRUCTUREGROUP_CODE
1	FR012	GlobalStructureGroup
2	GB011	GlobalStructureGroup
3	GB012	GlobalStructureGroup
4	Global	GlobalStructureGroup
5	SAGE	GlobalStructureGroup

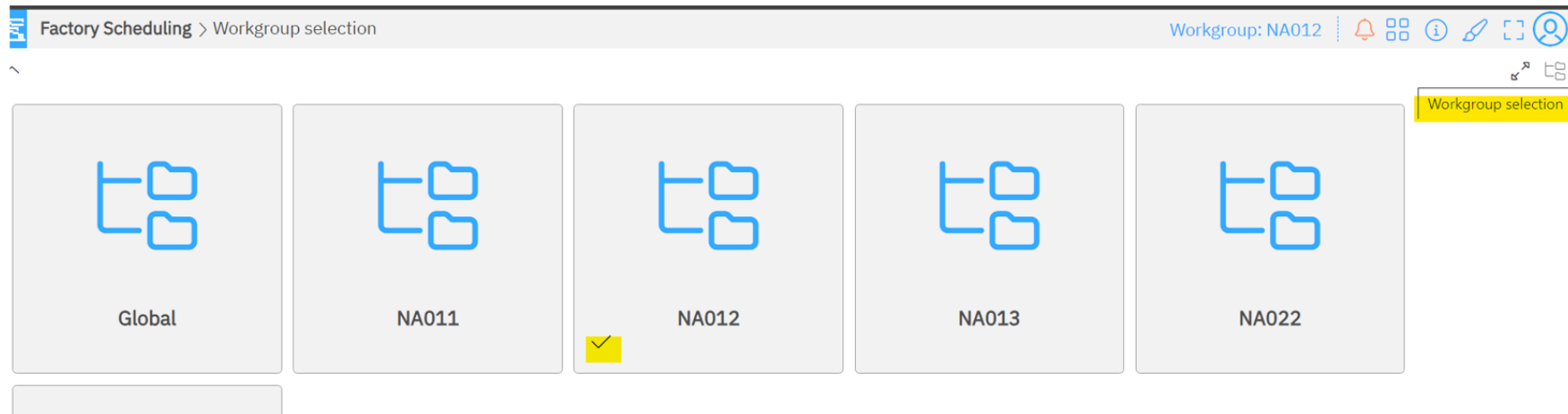
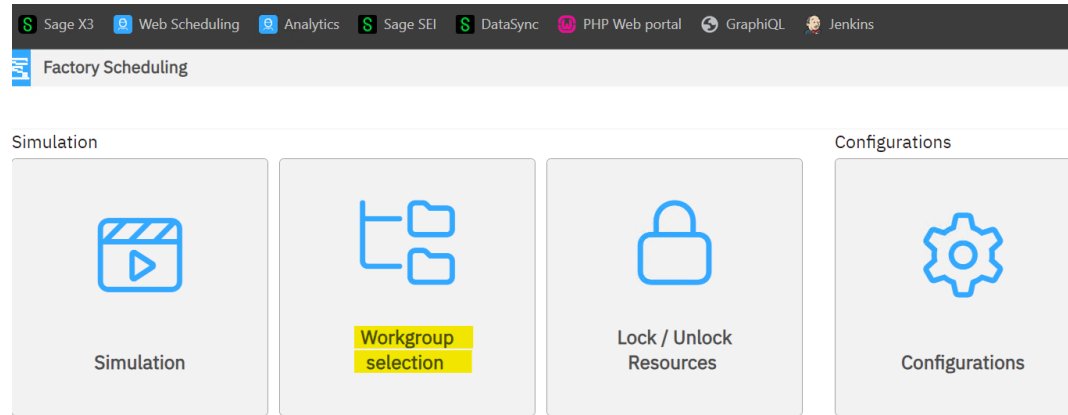
WORKGROUP_CODE	ID_USER
1	FR012
2	GB011
3	GB012
4	Administrator

WORKGROUP_CODE	MCH_CODE	STATUS
1	FR012_LAB001	1
2	FR012_LAB002	1
3	FR012_LAB003	1
4	FR012_LAB004	1
5	FR012_LAB005	1
6	FR012_LAB006	1
7	FR012_LAB007	1

# First thing's first.

After importing the Workgroups, Users can be associated with multiple Workgroups and you can select the current default value in Factory Scheduling – this accesses S\_WRK\_WORKGROUP\_USER and \_WRK\_WORKGROUP\_USER\_SELECTION





# Problems

# When things go wrong.....

Things don't always go as expected!

The main sources of information for troubleshooting during installation and set-up are

- Launching sites in a Browser – this may show useful error messages
- Windows Event Viewer
- Installation log files in C:\ProgramData\sedApta\logs\installer and under the install-base folder sedApta\SupplyChain\Log\Seiryu\NICIMACN\_DEFAULT
- Other log-files are also in sub-directories of C:\ProgramData\sedApta\logs
- As we're using GraphQL, the x3services xtrem log-files may assist as well (typically, d:\sage\SafeX3\x3services\logs).

Here are a few issues I've encountered whilst using Web Scheduling, and what I did to troubleshoot them – you may encounter other issues where these methodologies may help.


Problems 1, 2 and 3 demonstrate how I diagnosed a couple of issues during the early stages of an installation.

# When things go wrong....

## Problem 1

During the installation process, the installer tries to validate the Web Sites and I got the following:

INSTALLING – SEDAPTA SUITE

 Access Control Manager

---

**Error on Upload Role to ACM**

Url Acm

Url AcmWs

---

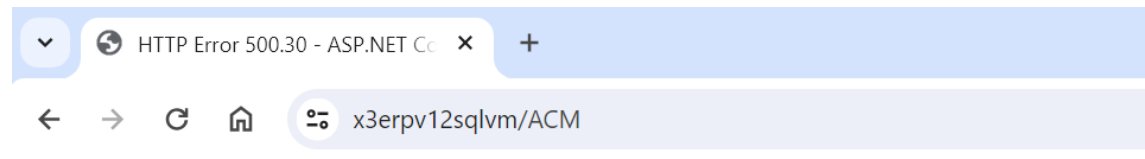
DESCRIPTION

Response status code: InternalServerError

# When things go wrong.....

## Problem 1

Launching the same URL in Chrome or via IIS, I got the same error:



HTTP Error 500.30 - ASP.NET Core app failed to start

Common solutions to this issue:

- The app failed to start
- The app started but then stopped
- The app started but threw an exception during startup

Troubleshooting steps:

- Check the system event log for error messages
- Enable logging the application process' stdout messages
- Attach a debugger to the application process and inspect

For more information visit: <https://go.microsoft.com/fwlink/?LinkID=2028265>

# When things go wrong....

## Problem 1

Looking in Windows Event Viewer:

The screenshot displays the Windows Event Viewer interface. The left pane shows the tree view with 'Windows Logs > Application' selected. The main pane shows a list of events, with event ID 1026 (Error) from the source '.NET Runtime' highlighted. The 'Event Properties' dialog box is open, showing the 'Details' tab. The details pane contains the following information:

Level	Date and Time
Information	04/04/2024 15:33:07
Information	04/04/2024 15:33:04
Error	04/04/2024 15:33:01
Error	04/04/2024 15:33:01
Error	04/04/2024 15:33:01
Error	04/04/2024 15:33:01
Error	04/04/2024 15:33:01
Error	04/04/2024 15:33:00
Information	04/04/2024 15:32:30
Information	04/04/2024 15:32:30
Error	04/04/2024 15:32:27
Error	04/04/2024 15:32:27

Event Properties - Event 1026, .NET Runtime

General Details

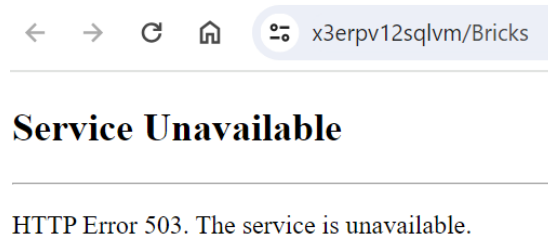
Application: w3wp.exe  
CoreCLR Version: 6.0.1122.52304  
.NET Version: 6.0.11  
Description: The process was terminated due to an unhandled exception.  
Exception Info: System.Data.SqlClient.SqlException (0x80131904): Invalid object name 'ACM\_Roles'.  
at System.Data.SqlClient.SqlConnection.OnError(SqlException exception, Boolean

Looking in the ACM Database, there are no tables. I double-checked SQL and the sysadmin and public Roles hadn't been assigned to the SQL Account.

# When things go wrong....

## Problem 2

I logged into the ACM and then tried to launch Bricks but got the following message



I then launched the same page from IIS, and got the same message.

I looked in Window Event Viewer and found the following Events:

Level	Date and Time	Source	Event ID	T. ^
Error	11/04/2024 12:41:14	User Pr...	1511	N
Warning	11/04/2024 12:41:14	User Pr...	1600	N
Error	11/04/2024 12:41:14	User Pr...	1500	N
Warning	11/04/2024 12:41:14	User Pr...	1600	N
Error	11/04/2024 12:41:14	User Pr...	1511	N
Warning	11/04/2024 12:41:14	User Pr...	1600	N
Information	11/04/2024 12:41:03	IIS Asp...	1032	N

# When things go wrong.....

## Problem 2

- *Windows cannot copy profile from C:\Users\Default to C:\Users\ConfigurationManagerAppPool, you do not have enough disk space.*
- *Windows cannot find the local profile and is logging you on with a temporary profile. Changes you make to this profile will be lost when you log off.*
- *Windows cannot copy profile from C:\Users\Default to C:\Users\TEMP, you do not have enough disk space.*
- *Windows cannot log you on because your profile cannot be loaded. Check that you are connected to the network, and that your network is functioning correctly.*

*DETAIL - There is not enough space on the disk.*

So, that's a bit of a giveaway – check how much space is available on C-drive.

# When things go wrong....

## Problem 3

At the end of the installation, all looked ok in that it said “Setup Complete”, but there is a red error:

Setup Completed

The setup has ended successfully.

There were some problems during the database upgrade phase.  
Open DBUpdate and check the status of the database

Looking in the C:\ProgramData\sedApta\logs\installer log:

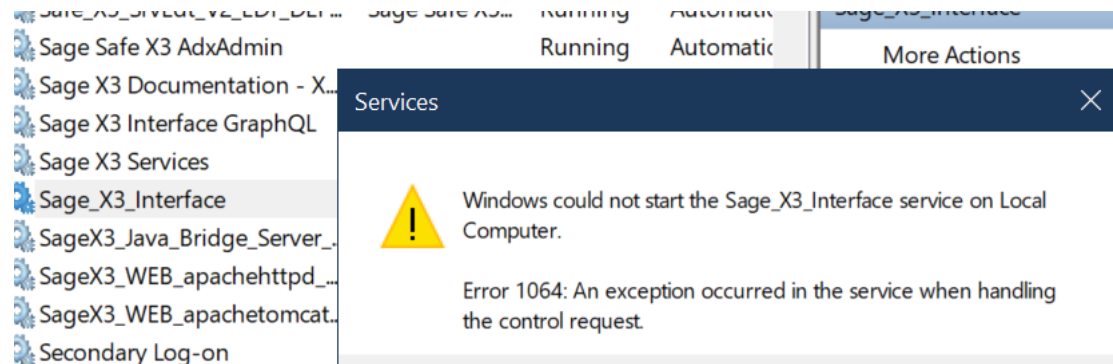
```
2024-03-27 18:27:10.1099 [DEBUG] Status Service: StartPending
2024-03-27 18:27:11.1109 [DEBUG] Status Service: StartPending
2024-03-27 18:27:12.1119 [DEBUG] Status Service: StartPending
2024-03-27 18:27:12.1119 [WARN] Cannot Start Windows Service : SedAptaSchedulerService. Timeout.
2024-03-27 18:27:12.1119 [DEBUG] Start Service: Sage_X3_Interface
2024-03-27 18:27:12.3399 [DEBUG] Status Service: StartPending
2024-03-27 18:27:13.3409 [DEBUG] Status Service: StartPending
2024-03-27 18:27:14.3419 [DEBUG] Status Service: Stopped
2024-03-27 18:27:14.3419 [WARN] Cannot Start Windows Service : Sage_X3_Interface
2024-03-27 18:27:14.3419 [DEBUG] NextState StartServices 9892803.2086
2024-03-27 18:27:14.3419 [DEBUG] SetState FinalizeSetup Previous StartServices 9892803.2975
2024-03-27 18:27:14.4499 [DEBUG] Total file copy time: 1026.63
```



# When things go wrong....

## Problem 3

Try starting the Sage\_X3\_Interface Windows Service



Looking in the C:\ProgramData\sedApta\logs\X3InterfaceService:

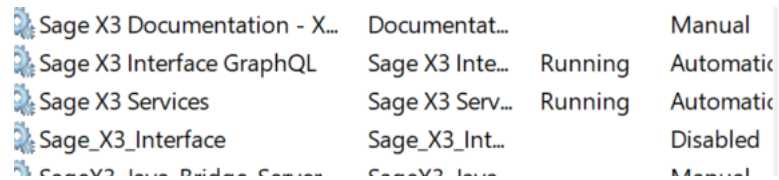
```
M.Persistence.Repositories.CommandRepository.GetNextCommand()  
InterfaceService.MainService.OnTimer(Object sender, ElapsedEventArgs e)  
029|INFO||Sedapta.Sage.X3InterfaceService.MainService|ex: A network-related or instance-specific  
viderBase.DbConnectionPool.TryGetConnection(DbConnection owningObject, TaskCompletionSource`1 ret  
viderBase.DbConnectionFactory.TryGetConnection(DbConnection owningConnection, TaskCompletionSourc
```

# When things go wrong....

## Problem 3

All the Databases and Tables which should be populated should have been created – this is just a check that the installer can communicate with X3 via an Interface.

Issues with Sage\_X3\_Interface Windows Service are academic as we're going to use the new GraphQL Interface instead, so disable Sage\_X3\_Interface and set Sage X3 Interface GraphQL to Automatic.



Sage X3 Documentation - X...	Documentat...		Manual
Sage X3 Interface GraphQL	Sage X3 Inte...	Running	Automatic
Sage X3 Services	Sage X3 Serv...	Running	Automatic
Sage_X3_Interface	Sage_X3_Int...		Disabled
Sage X3 Interface GraphQL	Sage_X3_Int...		Manual

After starting the Sage X3 Interface GraphQL, check the Interface log-file again to see if all is well.

# When things go wrong....

## Problem 3

Note that the Sage X3 Interface GraphQL may be seen as Running, but there could be errors in the C:\ProgramData\sedapta\logs\X3InterfaceService log-file due to attempts to start it before the Web Scheduler SQL Instance has started.

```
ersistence.repositories.CommandRepository.GetNextCommand()
erfaceService.MainService.OnTimer(Object sender, ElapsedEventArgs e)
|INFO||Sedapta.Sage.X3InterfaceService.MainService|ex: Maximum number of retries (2) exceeded while executing database operations w
erBase.DbConnectionPool.TryGetConnection(DbConnection owningObject, UInt32 waitForMultipleObjectsTimeout, Boolean allowCreate, Bool
erBase.DbConnectionPool.TryGetConnection(DbConnection owningObject, TimeSpan timeout, DbConnectionOptions userOptions
```

What it's trying to do at this stage is select from the NICIM database's dbo.SAGE\_POLLING\_TABLE

Try stopping and re-starting the Service and check in the log again

```
-----
INFO||Sedapta.Sage.X3InterfaceService.MainService|Service Stopped
INFO||Atomoshyla.NICIM.Persistence.DbInitializer|Sage tables already created
INFO||Atomoshyla.NICIM.Persistence.DbInitializer|Global already added in the S_WRK_WORKGROUP table
INFO||Atomoshyla.NICIM.Persistence.DbInitializer|SAGE already added in the S_WRK_WORKGROUP table
INFO||Atomoshyla.NICIM.Persistence.DbInitializer|MakeToStock setting is already false
INFO||Atomoshyla.NICIM.Persistence.DbInitializer|User parameter MODE_MACHINES_SECONDARY_ROUTING already deleted
INFO||Sedapta.Sage.X3InterfaceService.MainService|Service started
```

# When things go wrong.....

Once you've got Web Scheduling installed, things can still go wrong!

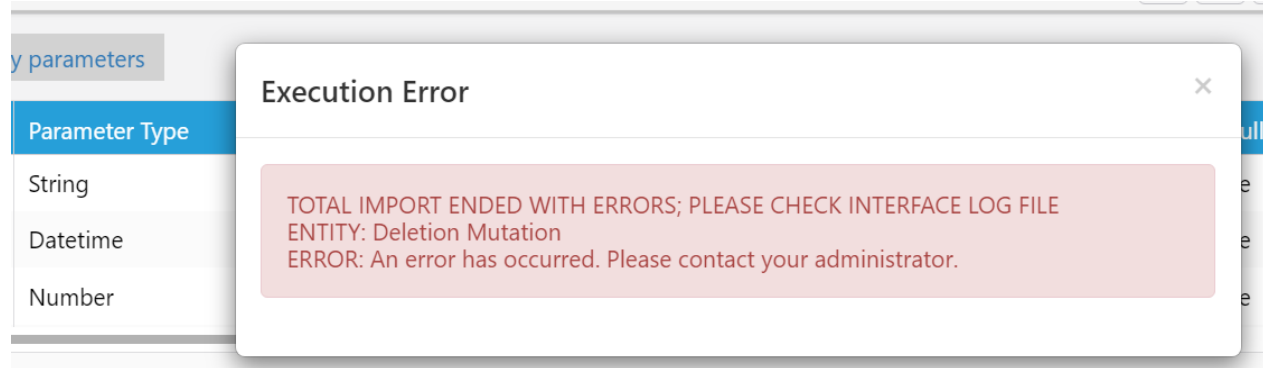
The most likely areas prone to issues are the Total and Partial Import tasks – these tasks rely on the Interface(s) between X3 and Web Scheduling.

After performing an Installation of Mobile Automation and Web Scheduling, it might be worth increasing the logging-levels in both components – once you're happy that the installations are stable, they can be reduced again.

# When things go wrong.....

## Problem 4

When performing the first Total Import, I received the following error:



Since this said, “Mutation”, it points to the X3 Services part of the chain of components, so I checked the X3 Services xtrem log-file

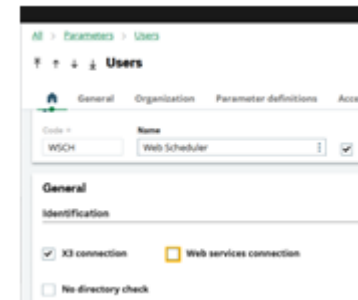
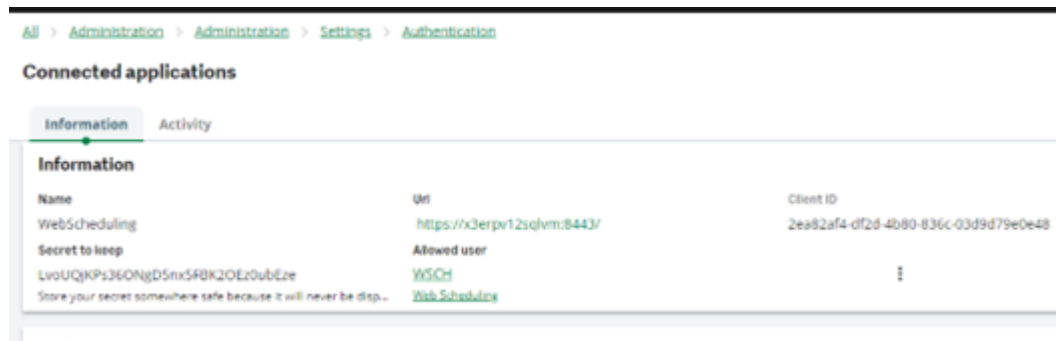


# When things go wrong....

## Problem 4

From past experience, the “User code not authorized...” error sounds like there is an issue with the Folder-level User account.

First thing I checked was the Folder User – I noticed that I’d forgotten to specify the “Web services connection” for the Folder User WSCH which is associated with the Web Scheduling Connected Application.

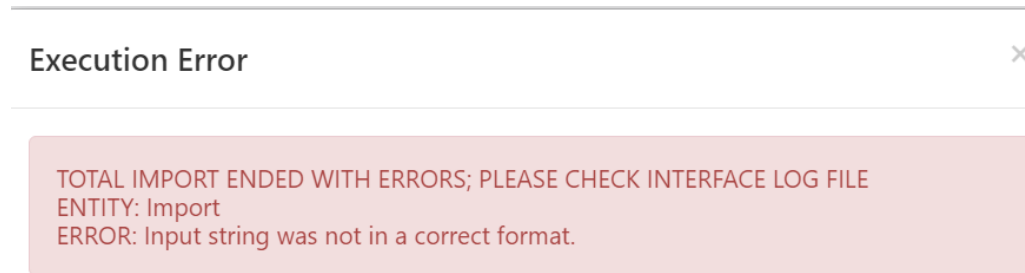


As for the “Failed to get description...”, this was resolved by ticking the “Web services connection” in the Folder User as well – logical, if the WSCH User can’t execute Web Services, then it can’t do the first step which is to do a SOAP “Get description” to confirm the presence of the first Web Service which is CWSGFSOBJ.

# When things go wrong....

## Problem 5

The next problem I encountered was when I tried to do a Total Import of GB012 Site



Again, this is an Interface issue, so I looked in the xtrem log and found the following:

```
13636 | 001784 | 15:21:12.398 | ERROR | xtrem-core/runtime | WorkCenter.encyInPercentage: error getting property value: WorkCenter: Record  
not found: {"code":"MAC016","manufacturingSite":"GB012"}  
13636 | 001785 | 15:21:12.400 | ERROR | xtrem-core/runtime | WorkCenter.description: error getting property value: WorkCenter: Record not found:  
{"code":"MAC016","manufacturingSite":"GB012"}  
13636 | 001786 | 15:21:12.404 | ERROR | xtrem-core/graphql | Error: WorkCenter: Record not found:  
{"code":"MAC016","manufacturingSite":"GB012"}
```



# When things go wrong....

## Problem 5

This would indicate that there's an issue with the X3 Work Centre in relation to GB012 so I looked for MAC016 in GESMWS – the Work Centre is only available for FR012 and NA012:

The screenshot shows the Sage X3 interface. On the left, a table lists Work Centres:

Work Centre	Post Title	Manufacturing Site	Work Centre Group
MAC016		FR012	GMA07
MAC016		NA012	GMA07

The right pane shows the detail view for MAC016:

- Work Centre: MAC016
- Manufacturing Site: FR012
- Description: Banc assemblage Vélo
- Short title: Assemblage
- Work Centre Group: GMA07
- Work Centre Type:  Machine,  Labour,  Sub-contracting

The screenshot shows the detail view for MAC016 with the following configuration:

- Work Centre: MAC016
- Manufacturing Site: GB012
- Description: Bike Assembly Bench
- Short title: Assemblage
- Work Centre Group: GMA07
- Work Centre Type:  Machine,  Labour,  Sub-contracting
- Controls: Parameter definitions
- Weekly structure: SC1
- Costing Dimension: CMAC009
- No. of resources: 1
- Automatic Close %: 100.000
- Location: SHF01
- Qualification Level: (empty)

Just to test the theory, I duplicated the FR012 instance, changing the Location to SHF01 to work with GB012 Site – success!

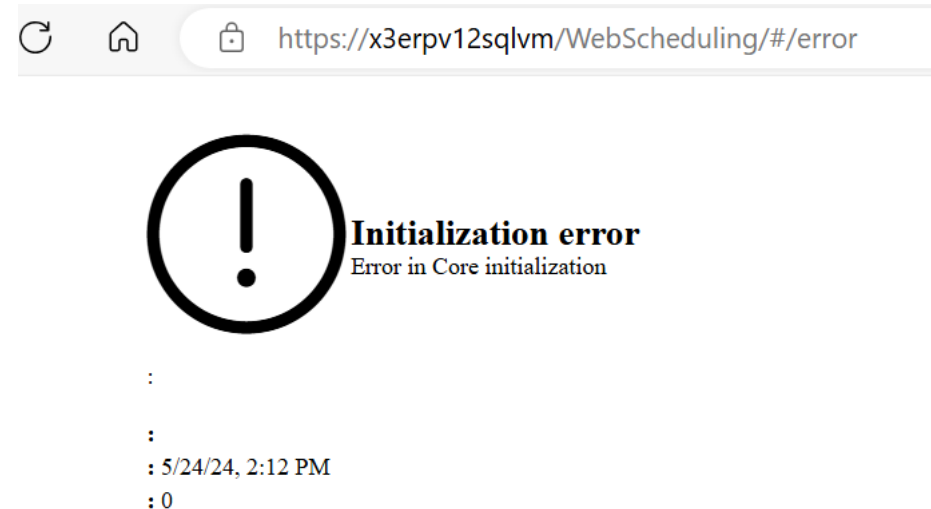
Success

TOTAL IMPORT EXECUTED SUCCESSFULLY.

# When things go wrong....

## Problem 6

I tried to launch Factory Scheduling from within ACM and directly from a URL in the browser and got



Just on a hunch, I checked the "SedApta Factory Scheduling" Service and it wasn't running, even though it's set to "Automatic", so I started it. It could be an issue with the Service trying to start before SQL or one of the Interface Services has started.

# When things go wrong.....

## The future

Unfortunately, I've not had a chance to try the 2024 R1 Web Scheduler yet – I'm not sure what sorts of errors will be encountered with the revamped X3 Services...

# Appendix

**Interesting Tables**

**Further reading**

# Interesting tables

Here are some key tables in Web Scheduling:

NICIM.dbo.S\_WRK\_WORKGROUP – List of Workgroups, equivalent to Sites in X3, plus “Global”. For example, “GB012” which is generated when GB012 Site’s data is imported.

NICIM.dbo.S\_WRK\_WORKGROUP\_STRUCTURE – This associates a Workgroups with Machines – “Global” accumulates all the “Machines” (X3 Work Centres) for all “Workgroups” (X3 Sites).

NICIM.dbo.S\_WRK\_WORKGROUP\_USER – This associates WORKGROUPS with Web Scheduling Users

NICIM.dbo.S\_WRK\_WORKGROUP\_USER\_SELECTION – associates a Default WORKGROUP to a User – related to “Error in GetWorkgroupSelected”

NICIM.dbo.SAGE\_LAST\_IMPORT – This is a list of Workgroups and their last-imported dates and times

NICIM.dbo.SAGE\_POLLING\_TABLE – history of Imports and any errors.

# Further Reading

Here are some articles which might be of interest when considering Web Scheduling with GraphQL

[Index page: Sage X3 Technical Support Tips and Tricks \(November 2023\) - Sage X3 UK Support & Insights - Sage X3 UK - Community Hub](#) – this has a presentation on “[Mobile Automation, Web Scheduling and GraphQL](#)” which discusses GraphQL and Web Scheduling integration and logging.

:

# Thank you!

