

Installation & Admin User Guide

NLTIntegrator 2.0

BMG Sage 300 People – aNewSpring Integration Project

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1. Introduction

1.1. Purpose

This document describes all the installation process for the NLTIntegratior 2.0 middleware starting from scratch. This document covers all the aspect of its installation including all various software's needed, and how to deploy the services in your machine.

1.2. Document Overview

The remainder of this document consists of the following sections:

- Section 2: Common Installation Problems Points out solutions to common problem that might be faced during installation and setup.
- Section 2: Software Installation All the various software that needs to be installed before the NLTIntegrator services can be installed and deployed.
- Section 3: Common Installation Problems Describe some of the common problems encountered while following section 2 of this document.
- Section 5: Getting the Services Running All the configuration needed to install and deploy the service in your machine.

1.3. Acquiring the Installation Files

The integration installation files should be acquired from New Leaf Technologies. They will all reside in a main folder that contains 3 subdirectories:

- Database: This folder contains the database that keeps track of the integration between the two systems.
- Service: This folder contains a setup file used to create a Windows service that integrates Sage 300 People and aNewSpring.
- Views: This folder contains the Views and a Schema that need to be created on the Sage 300 People database.

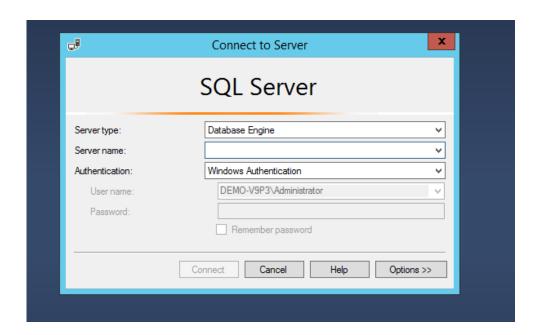
Name	Date modified	Туре	Size
☐ Database	2020/02/27 10:51	File folder	
Service	2020/02/26 3:20 PM	File folder	
Views	2020/02/27 10:51	File folder	

2. Sage Database Integration Views and User Configuration

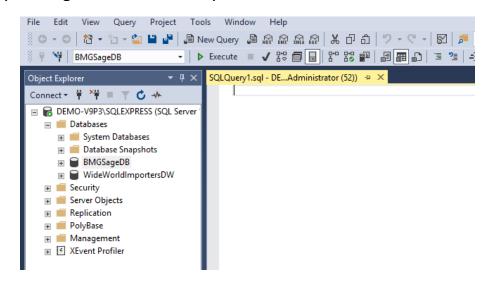
2.1. Set up Integration Views

To set up the Integration Views and User on the Sage Database, follow the steps below:

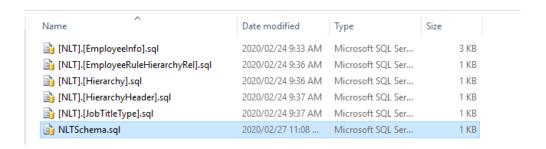
Step 1: With an Administrator Login log onto the SQL Server Management Studio where the Sage 300 People database is being hosted.

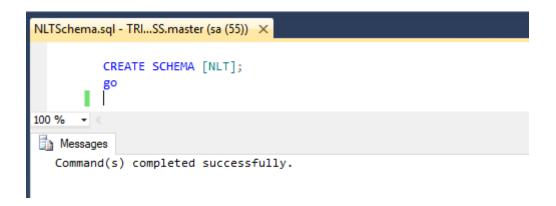


Step 2: Select the Sage Database and open a new query window by clicking on the 'New Query' button.



Step 3: Drag and drop the SQL Script named NLTSchema (found in the Views folder) to the new window and press 'Execute' to create the NLT schema on the Sage 300 People database.





Step 4: Drag and drop the [NLT].[EmployeeInfo] script to SSMS and press 'Execute' to create the [NLT].[EmployeeInfo] view on the Sage 300 People database.

```
| CORATE VIEW [NLT], [EmployeeInfo]
| AS |
| SIECT or. CompanyInductors, companyIndu
```

Step 5: Drag and drop the [NLT].[EmployeeRuleHierarchyRel] script to SSMS and press 'Execute' to create the [NLT].[EmployeeRuleHierarchyRel] view on the Sage 300 People database.

```
[NLT].[EmployeeRul...tionDemo (sa (55))* ×

□ create View [NLT].[EmployeeRuleHierarchyRel] AS

Select erhr.EmployeeRuleID,

erhr.HierarchyHeaderID,

erhr.HierarchyID

from Employee.EmployeeRuleHierarchyRel erhr

GO
```

Step 6: Drag and drop the [NLT].[Hierarchy] script to SSMS and press 'Execute' to create the [NLT].[Hierarchy] view on the Sage 300 People database.

```
[NLT].[Hierarchy].s...ationDemo (sa (53))* ×

□ CREATE VIEW [NLT].[Hierarchy]

AS

SELECT h.HierarchyID,

h.HierarchyCode,

h.HierarchyName,

h.HierarchyHeaderID

FROM Entity.Hierarchy h

GO
```

Step 7: Drag and drop the [NLT].[HierarchyHeader] script to SSMS and press 'Execute' to create the [NLT].[HierarchyHeader] view on the Sage 300 People database.

```
[NLT].[HierarchyHe...ationDemo (sa (52)) ×

CREATE VIEW [NLT].[HierarchyHeader]

AS

SELECT HH.HierarchyHeaderID,

HH.Code,

HH.ShortDescription,

HH.LongDescription,

HH.Status

FROM Entity.HierarchyHeader HH

GO
```

Step 8: Drag and drop the [NLT].[JobTitleType] script to SSMS and press 'Execute' to create the [NLT].[JobTitleType] view on the Sage 300 People database.

```
[NLT].[JobTitleType...ationDemo (sa (53))* X

□CREATE view [NLT].[JobTitleType] AS

SELECT

[JobTitleTypeID]
,[Code]
,[ShortDescription]
,[LongDescription]
,[Comment]
,[Status]

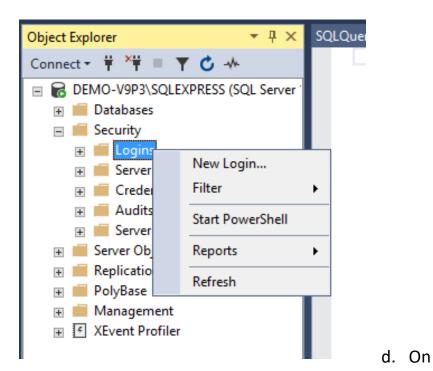
FROM [AutomationDemo].[Employee].[JobTitleType]
```

Step 9: Control the Integration access and permissions to the Sage 300 People database.

Step 9.1: Create a new SQL Login:

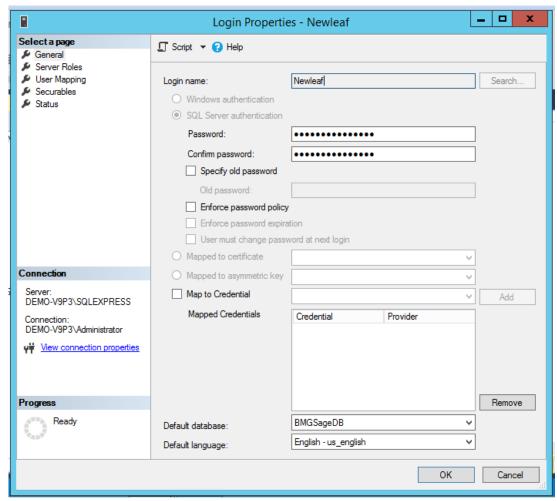
On the currently logged in server:

- a. Expand the Security folder.
- b. Right-click the Login folder.
- c. Select 'New Login'



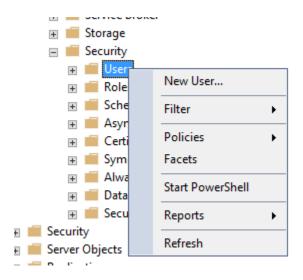
the new dialog box enter 'Newleaf' as Login name.

- e. Select the SQL Server authentication radio button.
- f. Enter and confirm a strong password. I.e: 'NLT@1B2!2!mg#'
- g. You can uncheck the following check boxes:
 - Enforce password policy
 - Enforce password expiration
 - User must change password at next login
- h. Select the Sage database as a default database. In this case select 'BMGSafeDB'.

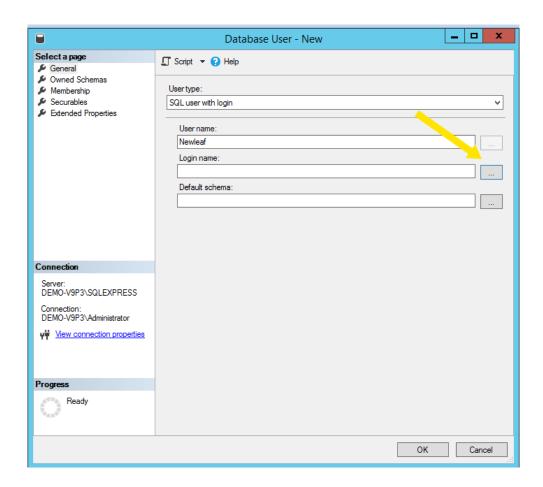


Step 9.2: Create a new User on the 'BMGSafeDB' Database based on the 'Newleaf' Login based on Step 9.1 and limit its access to the DB:

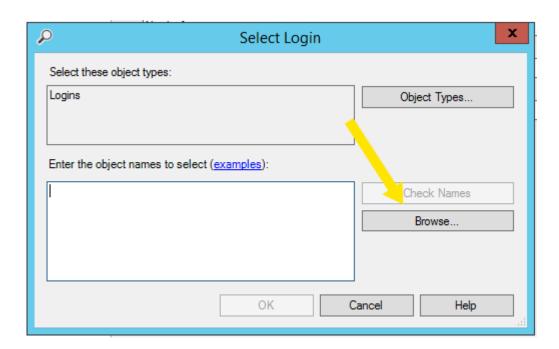
- a. Expand the 'BMGSageDB'
- b. Expand the Security folder
- c. Right-click on the Users folder and click on 'New User'



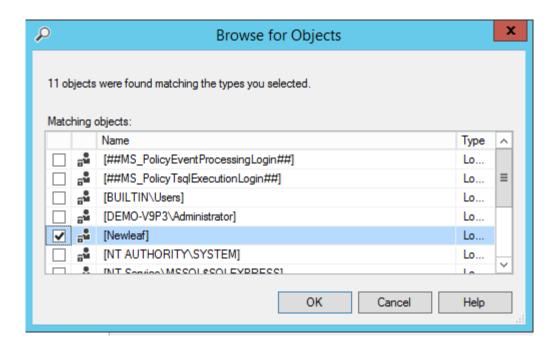
d. On the Database User – New windows, type 'Newleaf' on the User name field. For the Login name field, click on the three-dotted button.



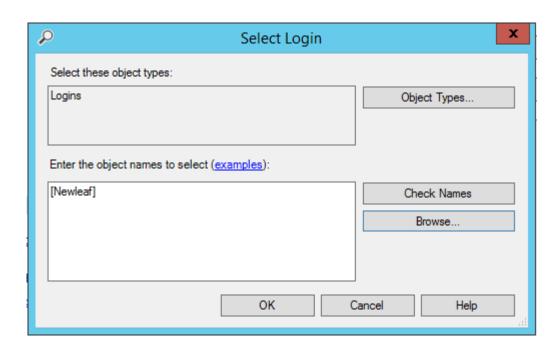
e. On the Select Login dialog box, click on the Browse button.



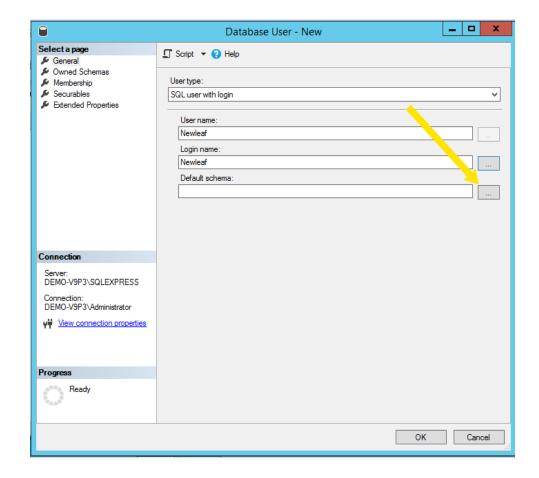
f. On the Browse for Objects dialog box select [Newleaf] and click OK.



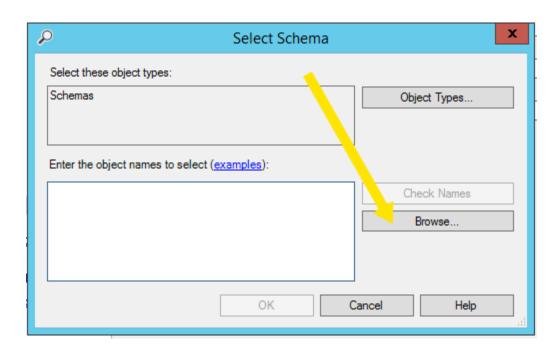
g. On the Select Login dialog box, click OK



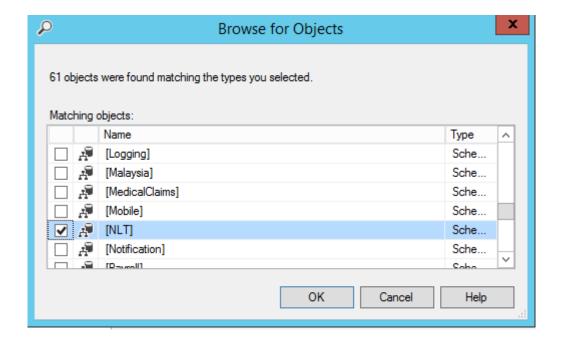
h. Back on the Database User – New dialog box, select the default schema by clicking on the three-dotted button.



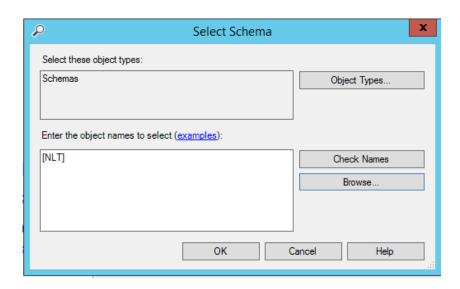
i. On the Select Schema dialog box, click on the 'Browse' button.



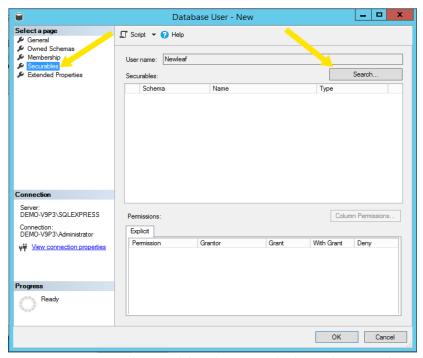
j. On the Browse for Objects, select only the [NLT] schema and click OK.



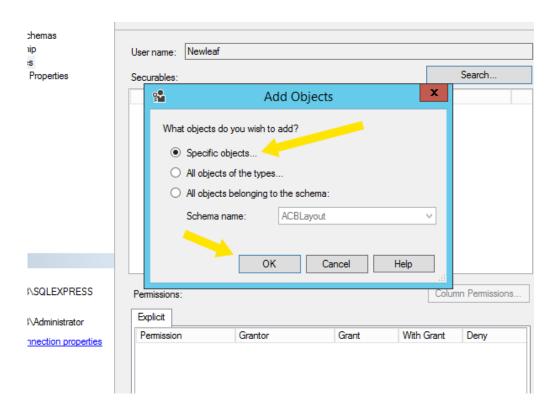
k. Back on the Select Schema dialog box, click OK to confirm the NLT schema.



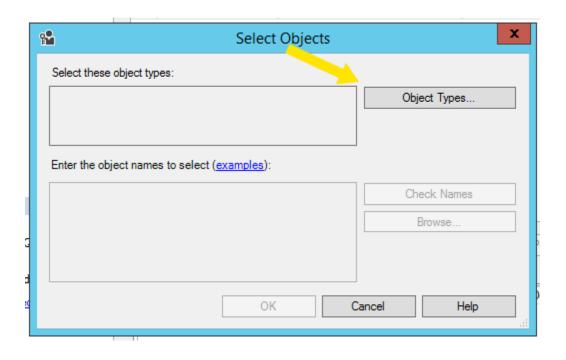
I. Back to the Database User – New, to select the object (in this case the NLT views) that the 'Newleaf' user should have access to, click on the 'Securables' tab then click on the Search button.



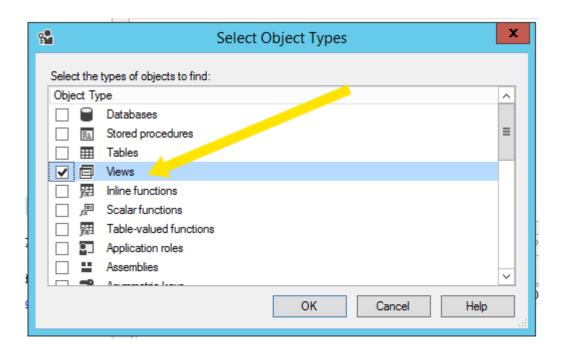
m. On the Add Objects dialog, leave the 'Specific objects' option selected and click OK.



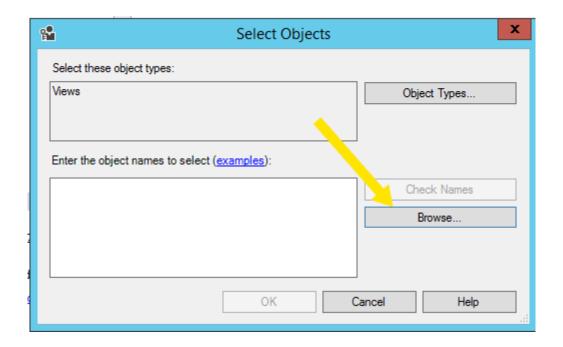
n. On the Select Objects dialog box, click on the 'Object Types' button.



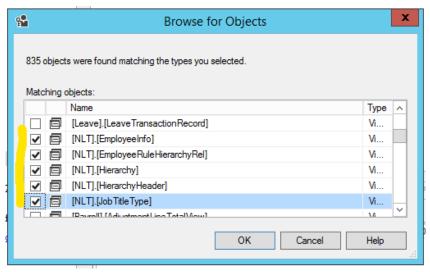
o. On the Select Object Types dialog box, tick the 'Views' checkbox.



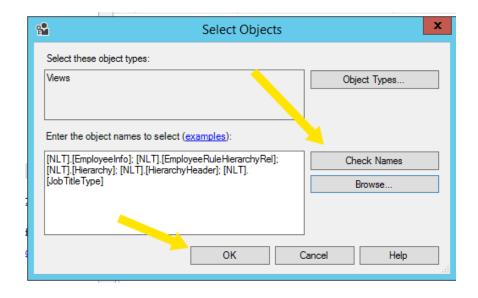
p. On the new dialog box, click on the Browse button.



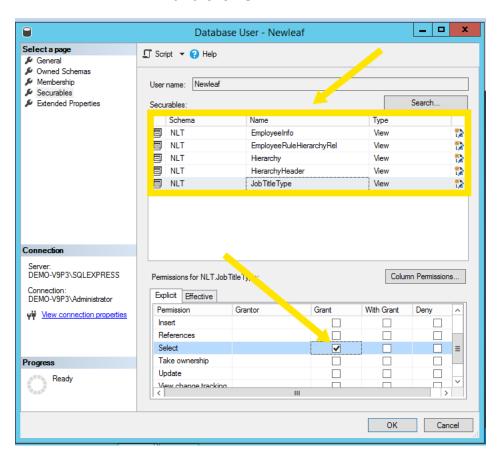
- q. On the Browse for objects dialog box now opened, check only the following views and click OK:
 - 1. [NLT].[EmployeeInfo]
 - 2. [NLT].[EmployeeRule HierarchyRel]
 - 3. [NLT].[Hierarchy]
 - 4. [NLT].[HierarchyHead er]
 - 5. [NLT].[JobTitleType]



r. On the Select Objects dialog box, click on the 'Check names' button and click OK

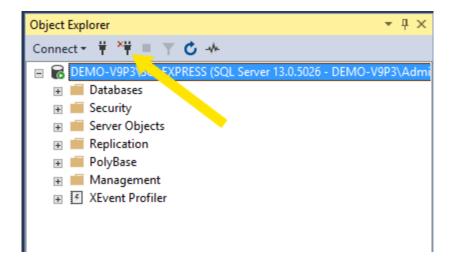


s. Now for each View under the Securables section, tick the 'Grant' check box for the 'Select' permission under the permission block. Leave all the other checkboxes unselected. Do it for all the listed Views and click OK.

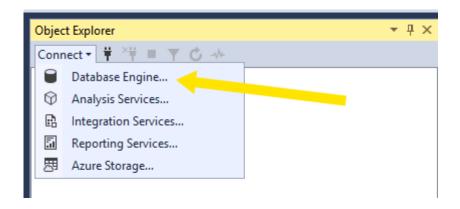


Step 9.3: Verify access assigned to the 'Newleaf' User:

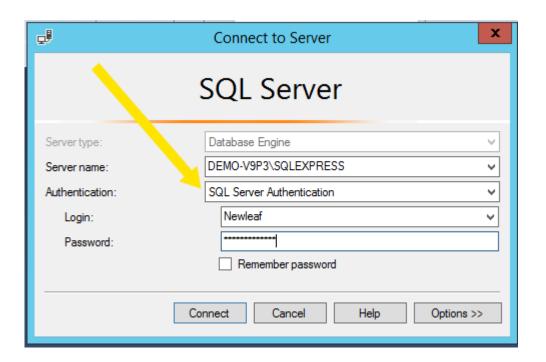
a. Disconnect from the Database Engine



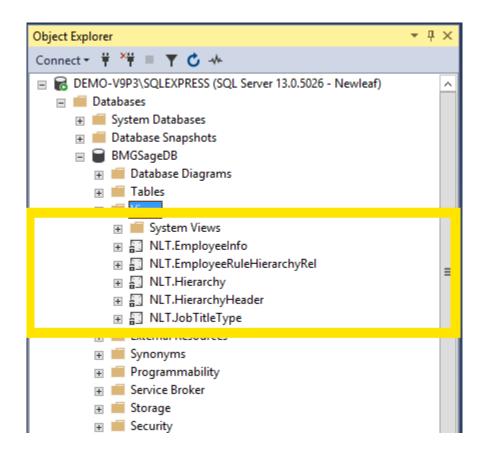
b. Connect back to the Database engine



c. On the Connect to Server dialog box, this time, as Authentication mode select 'SQL Server Authentication'. Then Insert the Login and password. In this case, Login is 'Newleaf' and the password is 'NLT@1B2!2!mg#'. Once inserted, click the Connect button.



d. Verify that the new user only has access to the assigned Views by Expanding the Database and the Views folder.



2.2. Setting up the Integration Database

Based on your internal infrastructure, you need to decide where the Integration Database will be hosted. In our scenario we are going to host it on the same server where the integration Windows Service will be running. To start, you need to make sure that SQL Server Express and SQL Server Management studio are installed. Use the following links to download them if they are not yet installed.:

- SQL Server® 2016 SP2 Express
 - https://www.microsoft.com/en-us/download/details.aspx?id=56840
- SQL Server Management Studio
 - https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver15

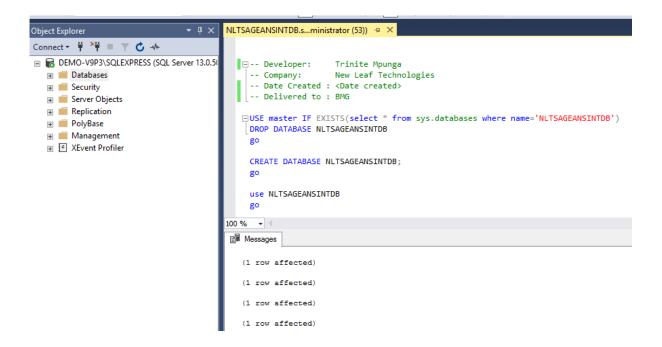
Once you have got them installed, follow the steps below to continue with the setup:

Step 1: Create the Integration Database.

To do that:

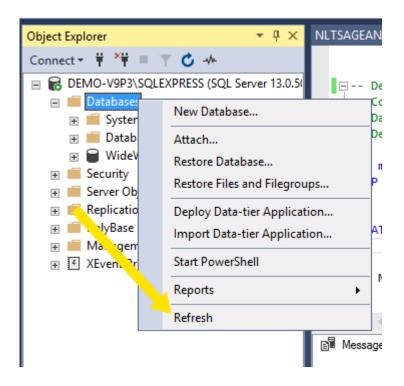
Step 1.1: Execute the NLTSAGEANSINTDB.sql script.

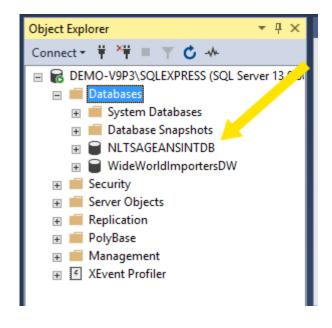
Go back to the Installation Files folder, open the Database folder and drag and drop the 'NLTSAGEANSINTDB.sql' file to the SQL management Studio and click 'Execute'.



Step 1.2: Verify that the new Database is created.

Right-click on the Database folder and click on refresh. Then expand the Database folder and see if you can see the NLTSAGEANSINTDB Database on the list.





Step 2: Set up the aNewSpring Configuration.

In this step you will set up the URI and API Key that the NLTIntegration will be connecting to. These items will be provided to you by New Leaf Technologies with all discretion. Open a New Query tab and type the following:

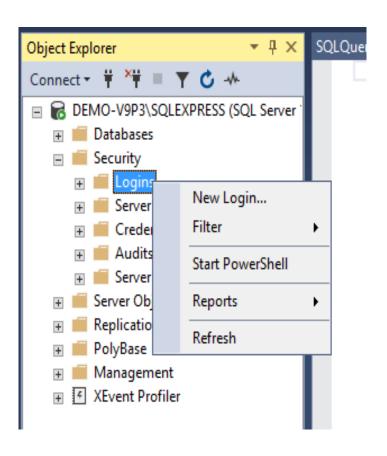
```
use NLTSAGEANSINTDB
go

update tbl_ans_configuration
set AnsConfigUrl = '<PROVIDED_URL>',
    AnsConfigKey = '<PROVIDED_KEY>'
where AnsConfigIdId = 1
```

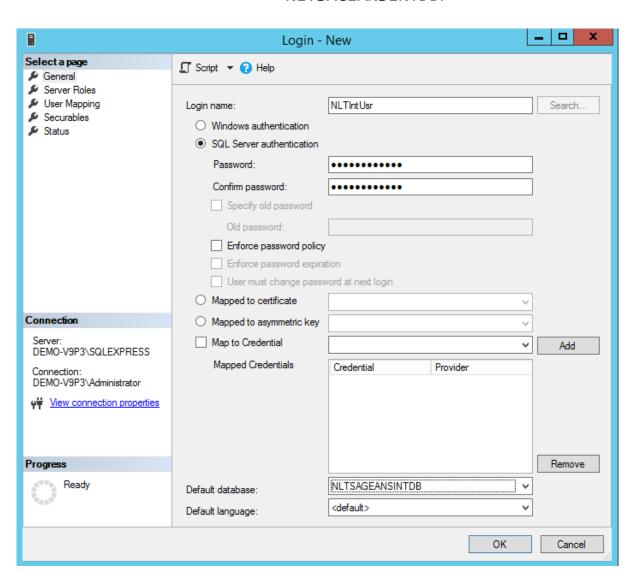
Step 3: Create the Integration Login.

This is the account that will be used by the NLTIntegrator to connect to the NLTSAGEANSINTDB Database.

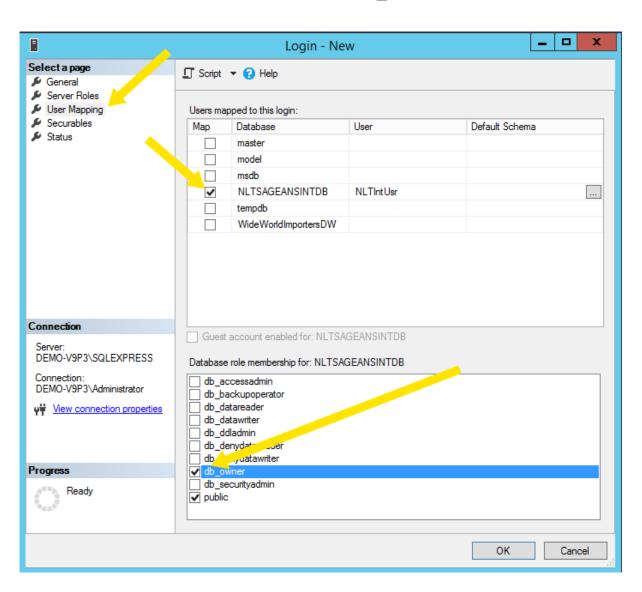
- a. Expand the Security folder.
- b. Right-click the Login folder.
- c. Select 'New Login'



- d. On the new dialog box enter 'NLTIntUsr' as Login name.
- e. Select the SQL Server authentication radio button.
- f. Enter and confirm a strong password. I.e: 'NLT#20>GM<!!'
- g. You can uncheck the following check boxes:
 - Enforce password policy
 - Enforce password expiration
 - User must change password at next login
- h. Select the Integration database as a default database. In this case select 'NLTSAGEANSINTDB.

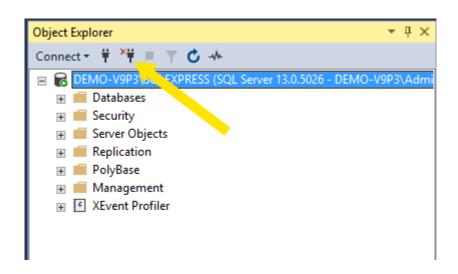


- i. Now you will need to map this user to the Database. To do so:
 - click the User Mapping tab on the left-hand side.
 - On the User mapped to this login sections, select the NLTSAGEANSINTDB Database.
 - Then on the Database role membership for: NLTSAGEANSINTDB, select db_owner and click OK.

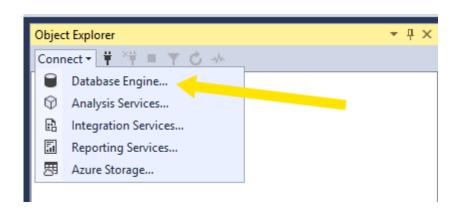


Step 4: Verify that the Integration User can login and access the Database.

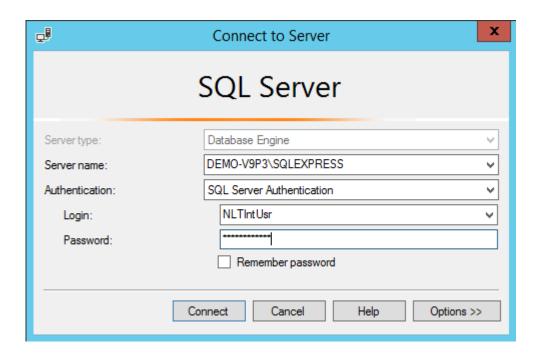
a. Disconnect from the Database Engine



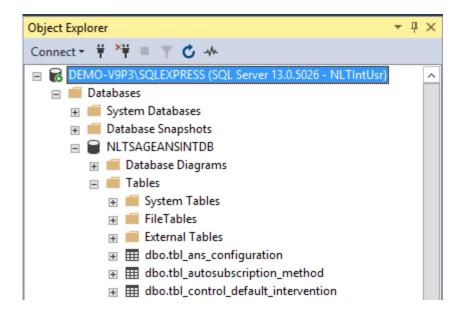
b. Connect back to the Database engine



c. On the Connect to Server dialog box, this time, as Authentication mode select 'SQL Server Authentication'. Then Insert the Login and password. In this case, Login is 'NLTIntUsr' and the password is 'NLT#20>GM<!!'. Once inserted, click the Connect button.



d. Verify that the new user is able to see all the Objects on the Database

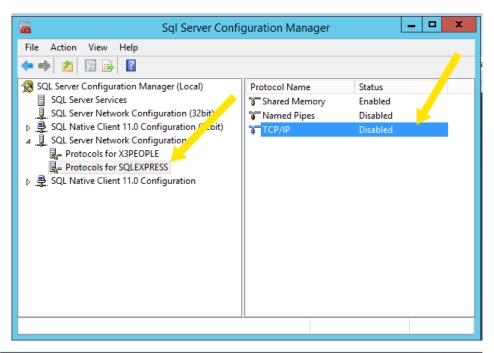


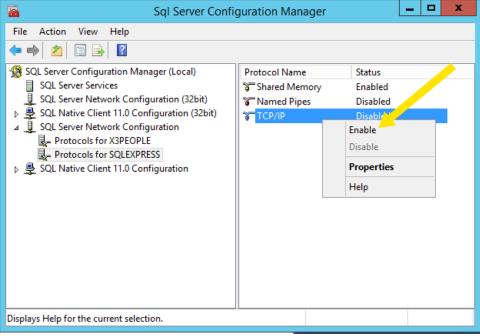
2.3. Configure connection to SQL Server.

To allow connection, you need to enable the TCP/IP Protocol and the port for the instance of the SQL Server you will be connecting to. In your case it is the SQLEXPRESS. Follow the steps below:

Step 1: Enable the TCP/IP Protocol

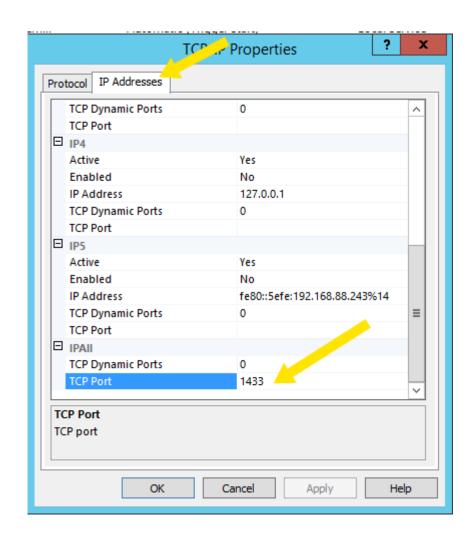
- Open the SQL Server Configuration Manager.
- > Expand **SQL Server Network Configuration**.
- Select Protocols for SQL (or SQLEXPRESS).
- Right-click TCP/IP and click Enable





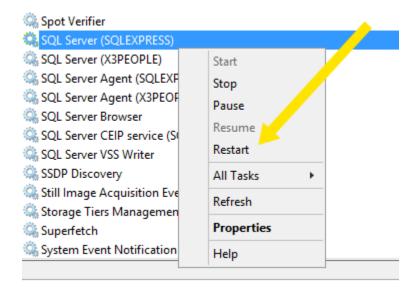
Step 2: Assign a TCP Port.

- ➤ Right-click **TCP/IP** and select Properties.
- > Select the IP Addresses tab
- ➤ Under IP All section, insert 1433 as TCP Port
- Click Apply and OK



Step 3: Restart the SQL Server (SQLEXPRESS) service.

- Click the **Windows key + R** to open the **Run** window.
- > Type services.msc and Click Ok
- Locate the SQL Server (SQLEXPRESS)
- Right-click it and select Restart

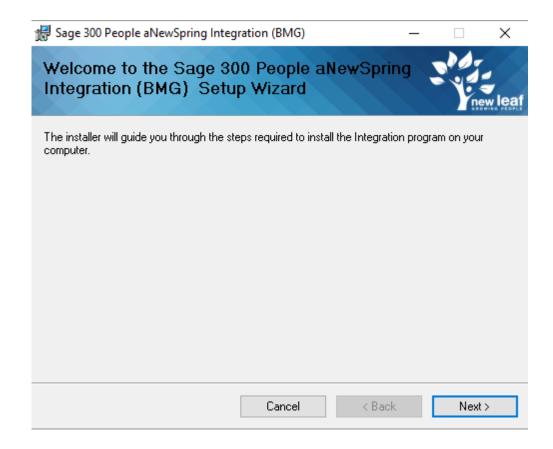


3. Software Installation

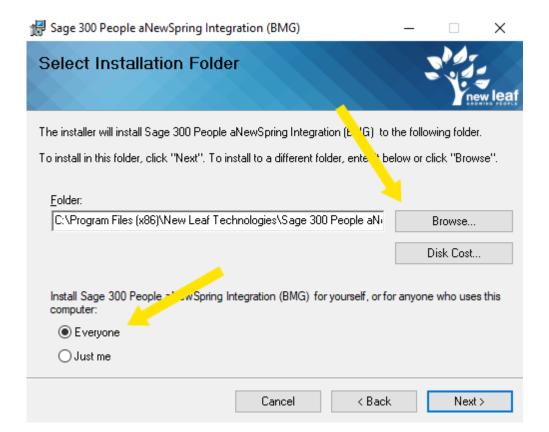
3.1. Run the Integration Setup file

This setup file can be found at Installation Files > Service

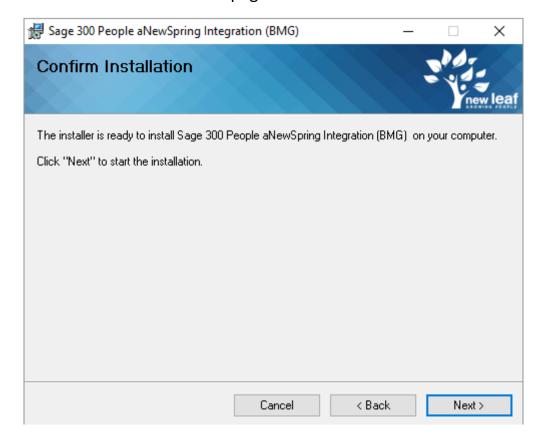
double-click on the Setup file and you will be presented with the following screen:



➤ You can leave the installation folder as it is or you can select a different folder by clicking on the Browse button. You have also got an option to select if the software should be installed for everyone or just the user that you are currently logged in as. You can switch between 'Everyone' and 'Just me'. Then press Next



Confirm the installation by click Next on the Confirm installation page.



On the Installation Complete page, click the close button



3.2. Update the Software Configuration File

Step 1: Locate the Installation Folder.

If the default values were selected during the installation, the configuration file will be located at the following path:

C:\Program Files (x86)\New Leaf Technologies\Sage 300 People aNewSpring Integration (BMG)

Step 2: Update credentials on the configuration file.

To do so, open the 'BB_Service_N.exe.config' file as administrator and update the following:

- For the Connection String name 'SageEntities':
 - Data source= <IP Address where the Sage DB is hosted>,<1433>
 - Initial catalog = <Sage Database name>
 - o user Id = <SQL Login name>
 - o password= <SQL Login password>
- For the Connection String name 'NLTSAGEANSINTDBEntities:
 - Data source= <IP Address where the Integration DB is hosted>,<1433>
 - Initial catalog = < Integration Database name >
 - o user Id = <SQL Login name>
 - o password= <SQL Login password>

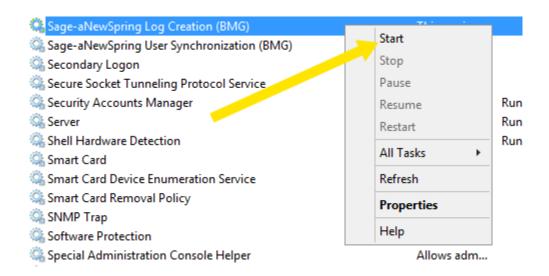
Step 3: Save and close this file.

4. Getting the Services Running

4.1. Initialize the Integration event Logs.

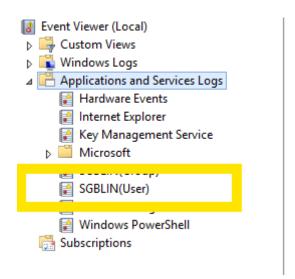
To start:

- > Open the services.msc console.
- Locate the 'Sage-aNewSpring Log creation (BMG)' windows service.
- Right-Click it and select Start



If started successfully, new entries will be created on the Event Viewer. To verify, follow the steps below:

- Open Event Viewer
- Expand the Applications and Services logs Folder
- Check if you can see SGBLIN(User). This will store all the log related to the 'Sage-aNewSpring User Integration (BMG)' service.

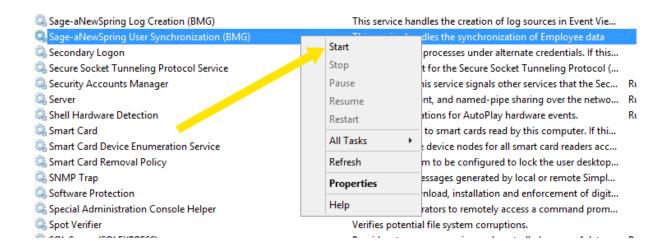


4.2. Run the installed integration Windows services

To get the integration started, follow the steps below:

- > Open the services.msc console.
- Locate the 'Sage-aNewSpring User Synchronization (BMG)' windows service.
- Right-Click it and select Start

Once the option start has been selected, relevant event logs will start to be created on Event Viewer. For more details refer to the next section. Note that these services are set to AutoStart on Computer start up.



By default, they run with an interval of 1 hour. For this version of the software, to change the time interval, a new pre-configured set up file will have to be requested from New Leaf Technologies. Once in possession of the new setup file, you will have to follow these steps:

- Uninstall the current software through Control Panel.
- > Run the new Setup file
- Update the 'BB_Service_N.exe.config' file
- Open 'Services.msc' and run the relevant services.

4.3. Monitor Integration event Logs.

The Entry Types or Levels involved in integration event logs are:

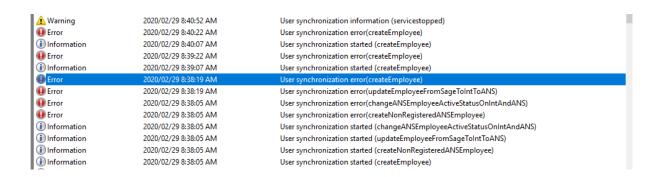
- Error: This usually happens when there is a SQL connection error and in rare cases any other exception thrown by the application.
- Warning: This happens when:
 - a. When the service has stopped
 - b. When there is a minimal Exception thrown from the system. i.e. Employee with no Manager records
- Information: This happens during the following activities:
 - c. When the service has started
 - d. When a Synchronization Module has started
 - e. When a Synchronization Module has stopped
 - f. When a synchronization Module has processed some data.

Alongside them are the Sources and Locations from when the error, warning or information originate. The Locations can easily be seen on the Source names and they are kept within the brackets.

A Location can be:

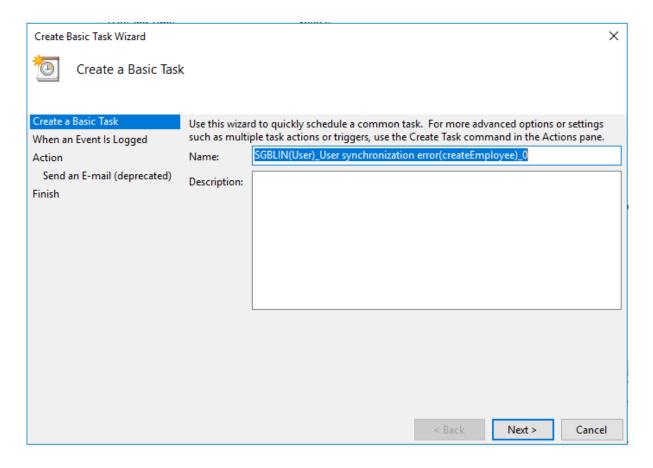
- Servicestopped
- Servicestarted
- createEmployee

- updateEmployeeFromSageToIntToANS
- createNonRegisteredANSEmployee
- changeANSEmployeeActiveStatusOnIntAndANS

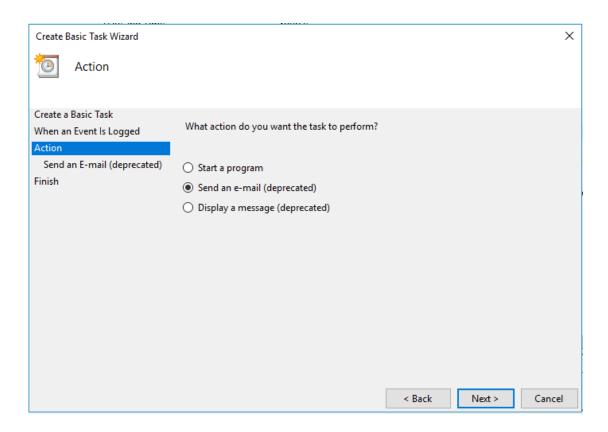


One can choose to attach an email task a specific event when it occurs:

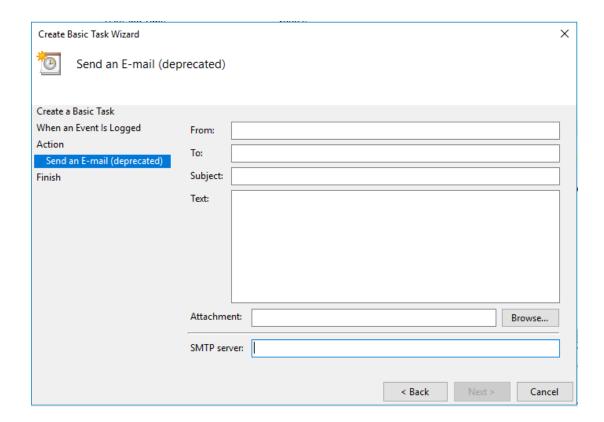
- Right-click the event and select 'Attach Task To This Event...'
- Enter a correct description and click next



Under Action select 'Send an e-mail'



Under Send an email enter the correct information and click Next, then click Finish.



5. Fields Mapping

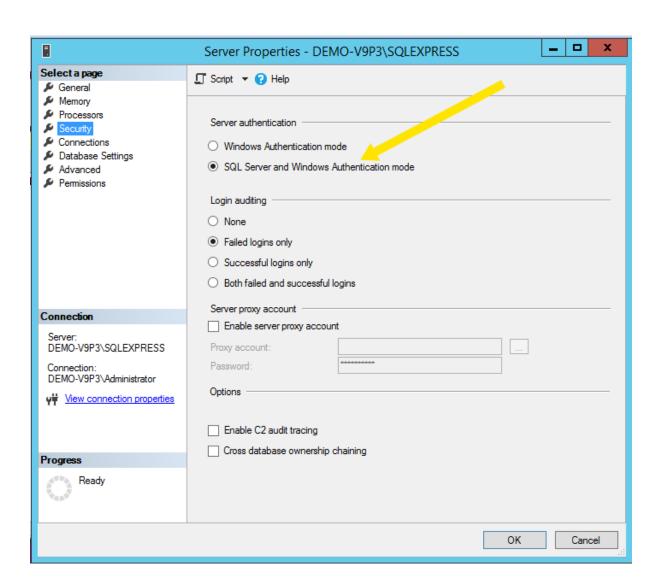
SAGE	aNewSpring		
Email	Login		
First Name	First Name		
Last Name	Last Name		
Email	Email		
First Name+"welcome" (to change at next	Password		
logon)			
Company Display Name	Company		
Job Title	Function		
Cost Centre	Zip Code		
SAGEEMP+"Employee Internal ID"	External ID		
Status: Active, New and Re-instated	'Added' as Active users		
Other statuses	'Changed' from Active to Inactive		
	Notify User that the account has been		
	created		
	orce Change Password at next logon		

6. Common Installation Problems

6.1. Failed login for the newly created SQL user

If you can't login with a newly SQL account, there is more chance that the SQL Server and Windows Authentication mode is not yet selected. To fix this:

- a. Right-click on the server name, in this case 'DEMO-V9P#\SQLEXPRESS
- b. Click properties
- c. On the Security tab, make sure that SQL
 Server and Windows Authentication
 mode is selected



6.2. Database Connection Failure

You might see the following error on you logs:

(i) Information	2020-02-29 08:46:33 AM	User synchronization started (createEmployee)	0 No
(Error	2020-02-29 08:45:48 AM	User synchronization error(createEmployee)	0 No
Information	2020-02-29 08:45:33 AM	User synchronization started (createEmployee)	0 No

"System.Data.Entity.Core.EntityException: The underlying provider failed on Open. ---> System.Data.SqlClient.SqlException..."

This simply means that NLTIntegrator is failing to connect to a Database. It can either be the Sage 300 People Database or the Integration database. To find out, you will have scroll down the event log and look at the before-last line. It you see:

- At BB_Service_N.SageList.Employeeinfo():
 This means that the NLTIntegrator is failing to connect to the Sage Database.
- At BB_Service_N.IntList.EmployeeList():
 This means that the NLTIntegrator is failing to connect to the integration Database.

There are a couple of troubleshooting steps that you can take to solve this issue:

- Make sure you can ping server hosting the Database you are getting the error for.
- Make sure that that server allows traffic to port 1433
- Make sure that the TCP/IP protocol is enabled the SQL Server Network Configuration.
- ➤ Make sure that you have entered the correct information on the 'BB_Service_N.exe.config' file.

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