

# BI4Dynamics Process Automation

How to automatically update data from BC Cloud, Data Lake to Analysis Services

BI server is On-Premises

**Last update: August 2021**

**Version 1.7**

**Revision 2.5**

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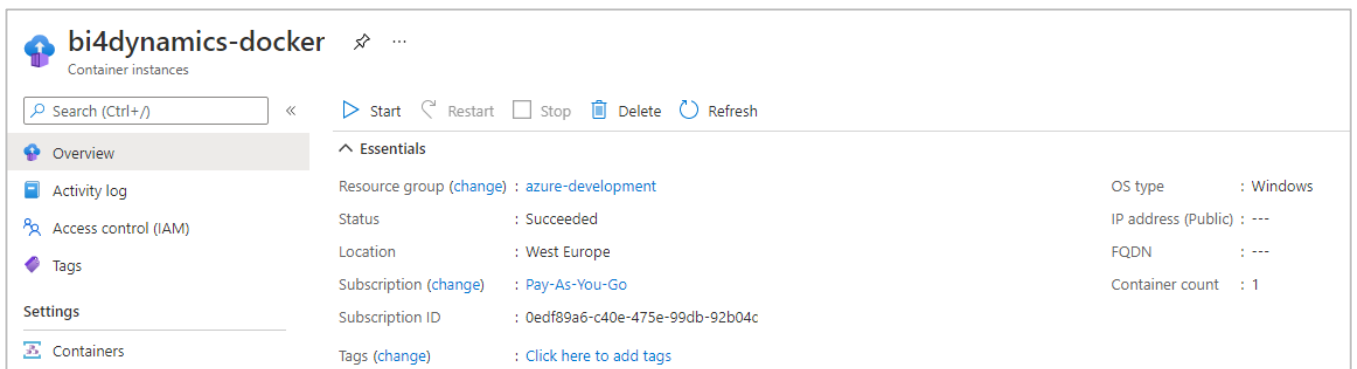
# 1 Process Automation #1 – Start Container Instance

## 1.1 Introduction

This automation process is for an Azure Container instance (Docker), which is a light virtual machine, based on BI4Dynamics image. These Container instances are used for running table export from BC to Blob storage. Through Logic apps docker will run on a scheduled day and time. Logic app will automatically start and terminate the docker after finishing the export.

## 1.2 Prerequisite

For this manual you will need a working Container instance, which exports table data from BC to Blob storage. Picture below shows Container instance settings made as per instructions of BI4Dynamics in BI4Dynamics Infrastructure Installation (Local server + Azure resources).

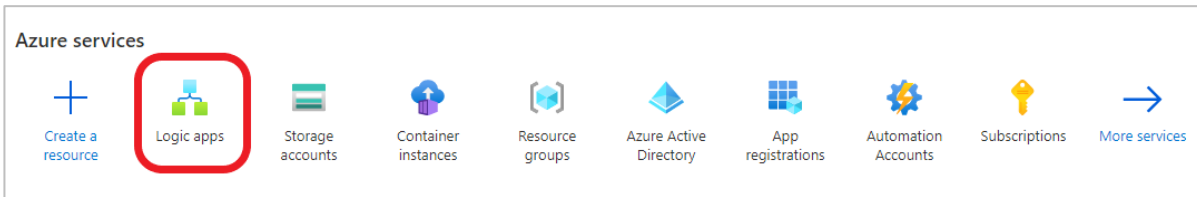


The screenshot displays the Azure portal interface for a container instance named 'bi4dynamics-docker'. The page is titled 'Container instances' and includes a search bar and action buttons: Start, Restart, Stop, Delete, and Refresh. The left sidebar shows navigation options: Overview (selected), Activity log, Access control (IAM), Tags, Settings, and Containers. The main content area is divided into 'Essentials' and a list of properties.

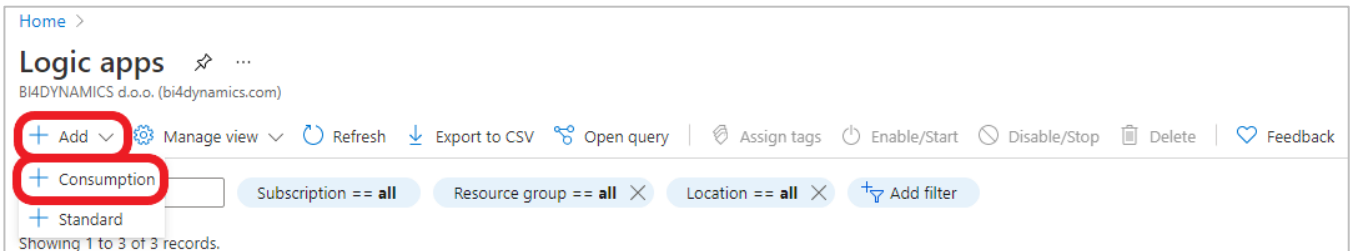
Property	Value
Resource group (change)	azure-development
Status	Succeeded
Location	West Europe
Subscription (change)	Pay-As-You-Go
Subscription ID	0edf89a6-c40e-475e-99db-92b04c
Tags (change)	<a href="#">Click here to add tags</a>
OS type	Windows
IP address (Public)	---
FQDN	---
Container count	1

### 1.3 Setup Logic App

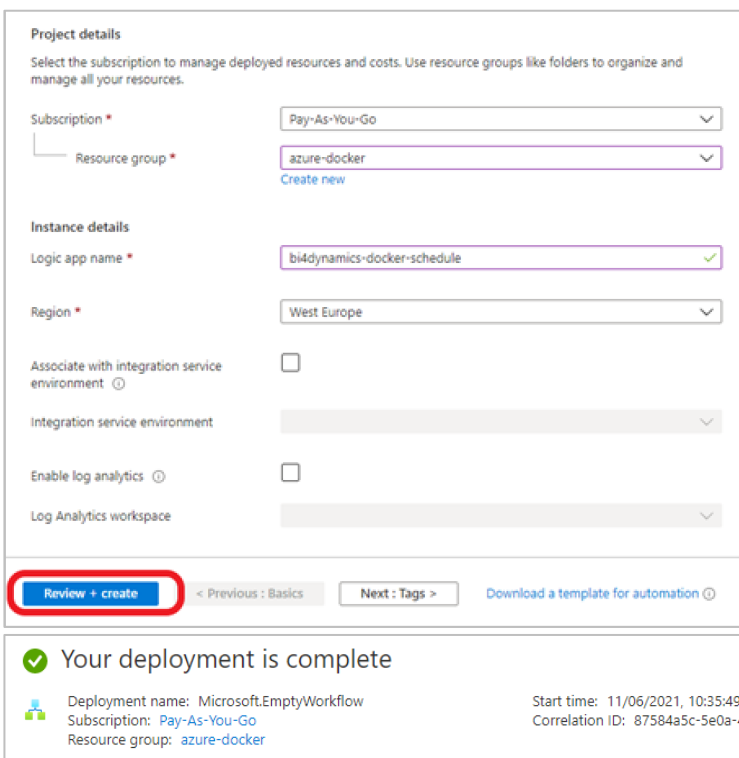
1. Search for **Logic Apps** in Azure.



2. **Add** a logic app and select **Consumption**



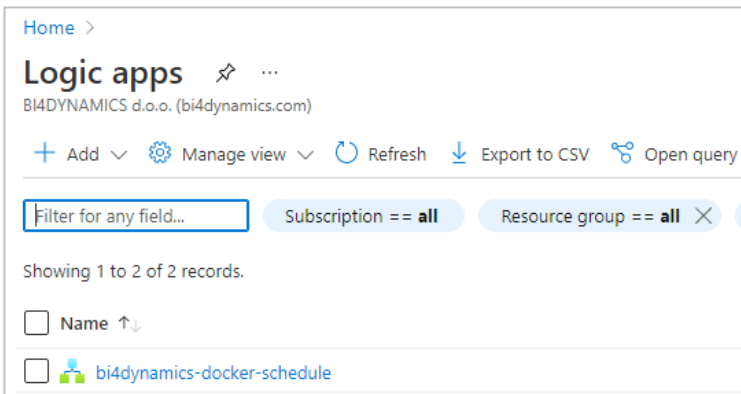
3. Enter **Subscription**, **Resource group** and create a meaningful **name** for your logic app. **Select** the Region and click **Review + create**. Select **Create** in the next window.



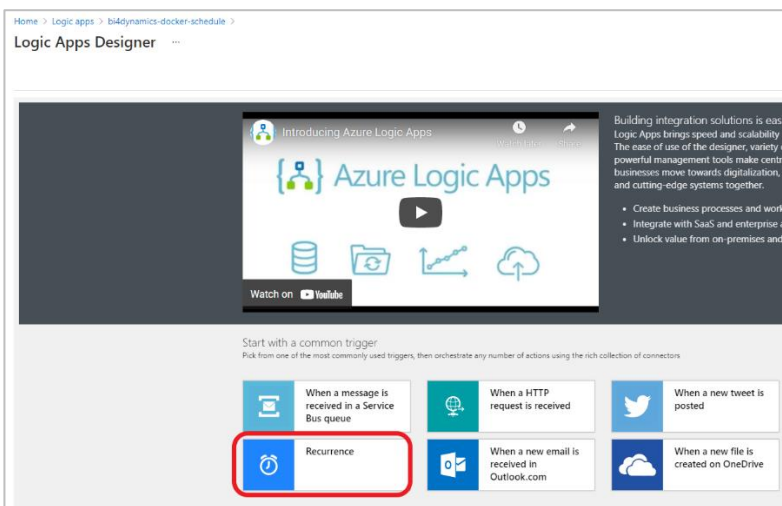
**Your deployment is complete**

Deployment name: Microsoft.EmptyWorkflow      Start time: 11/06/2021, 10:35:49  
Subscription: Pay-As-You-Go      Correlation ID: 87584a5c-5e0a-4  
Resource group: azure-docker

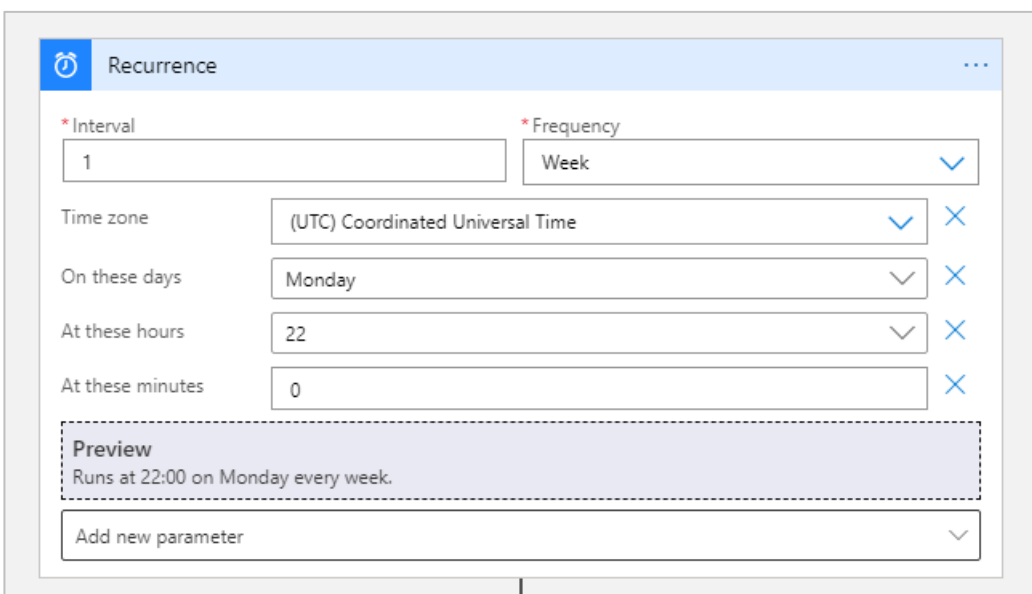
4. Go to **Logic apps** and open the newly created application.



5. Logic apps designer will open with premade templates to use. Select **Recurrence** in the template or search for it in the search dialog.

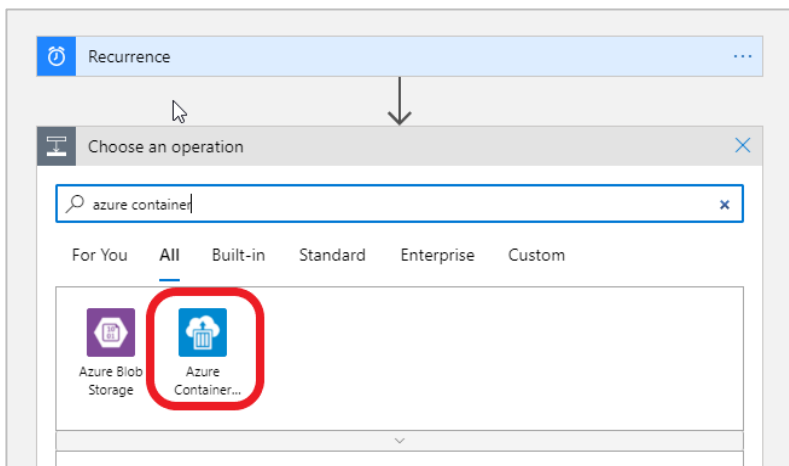


6. Select the **Interval** and **Frequency** at which you decide the docker should be run.

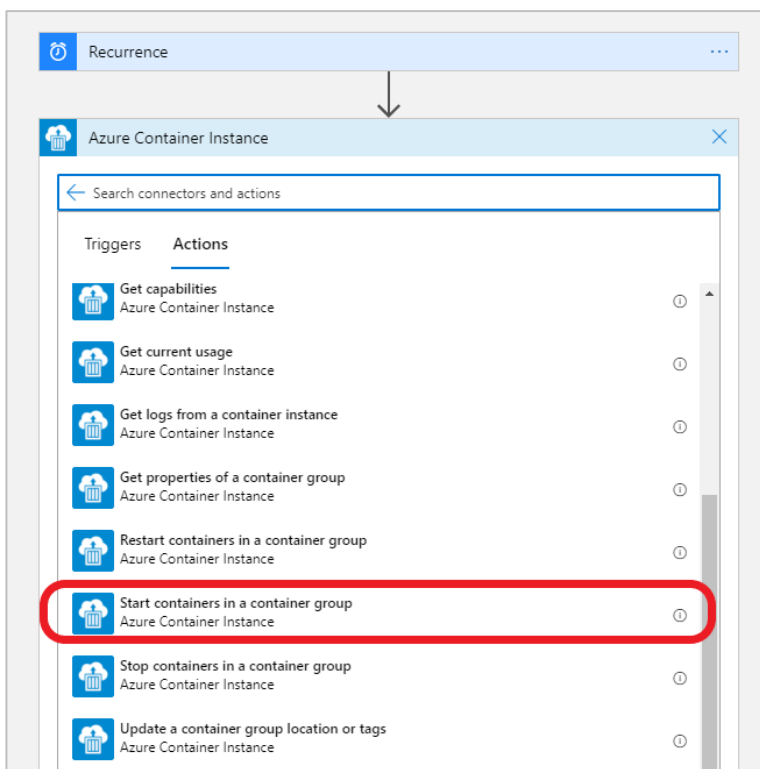


If the selected Frequency is Week, you can add new parameters which set the days, hours, and minutes when the application will run.

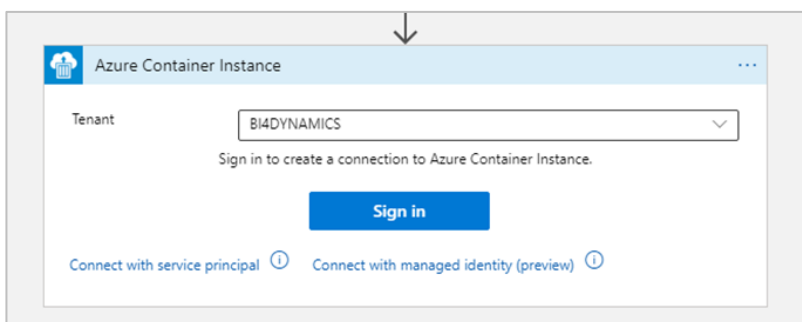
7. Click + **New step**, search for **Azure Container instance** and select it.



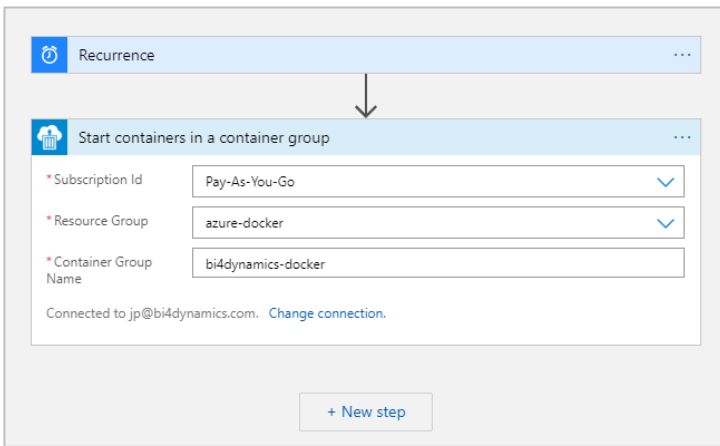
8. In the drop-down menu select **Start containers in a container group**.



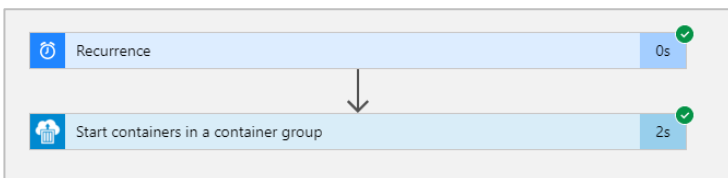
9. **Sign** into your tenant.



10. Enter your **Subscription Id**, **Resource Group** and **Container Group Name** (docker).

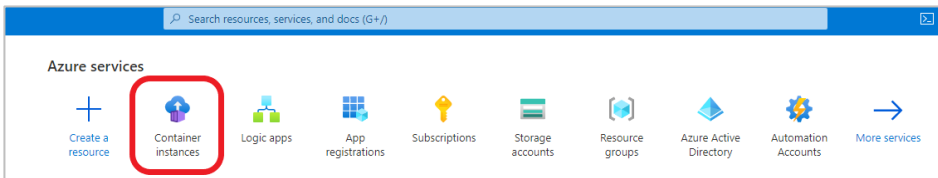


11. Click **Save** in the top left of the designer and press **Run** to test if the application is working correctly.

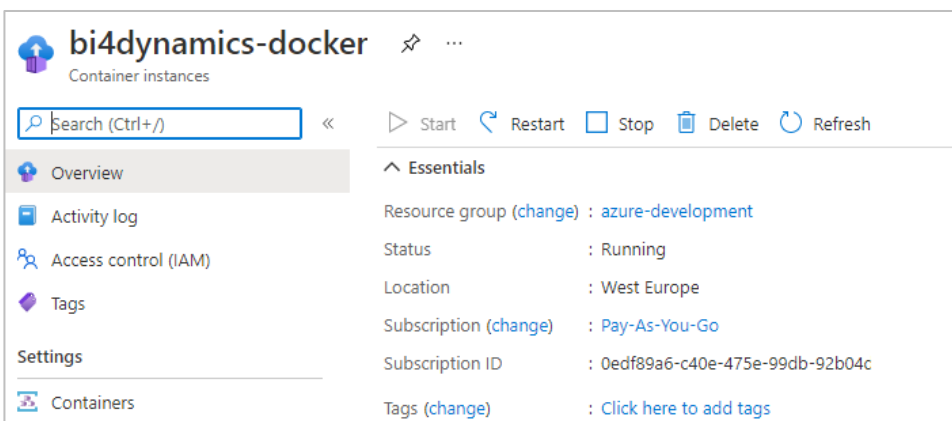


### 1.4 Test logic app

12. Go to **Container instances**.



13. Check the selected container instance (docker) if it is being **Created** or already **Running**.



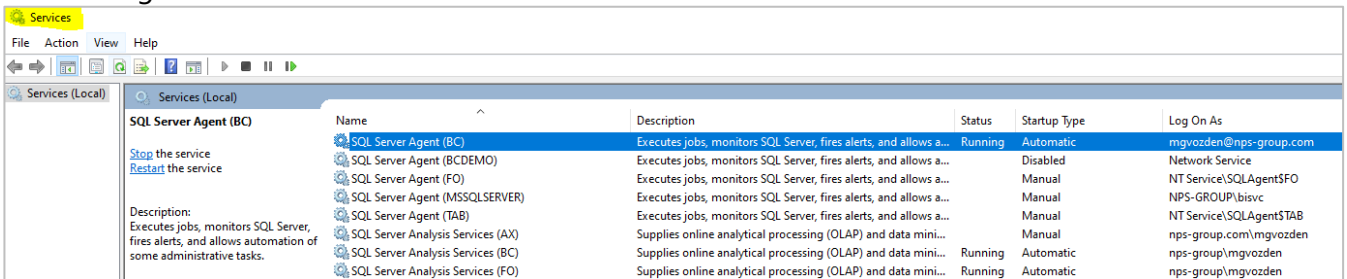
You have now successfully created and tested a logic app that automatically starts container instance at specific times.

## 2 Process Automation #2 – Start SQL server Agent (VM)

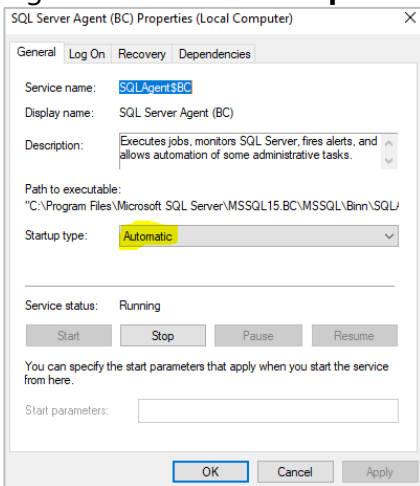
When Virtual machine is running, it is ready to process data. This process is triggered by SQL Server Agent feature, a part of SQL server.

### 2.1 Enable SQL Server agent

Go to **Services** and find the **SQL Server Agent** service. If you are using newly created Virtual Machine, it will probably be the only SQL Server Agent, but if you are running more SQL server engines, there may be more Agents.



Right click and select **Properties** and set Start-up Type to Automatic.

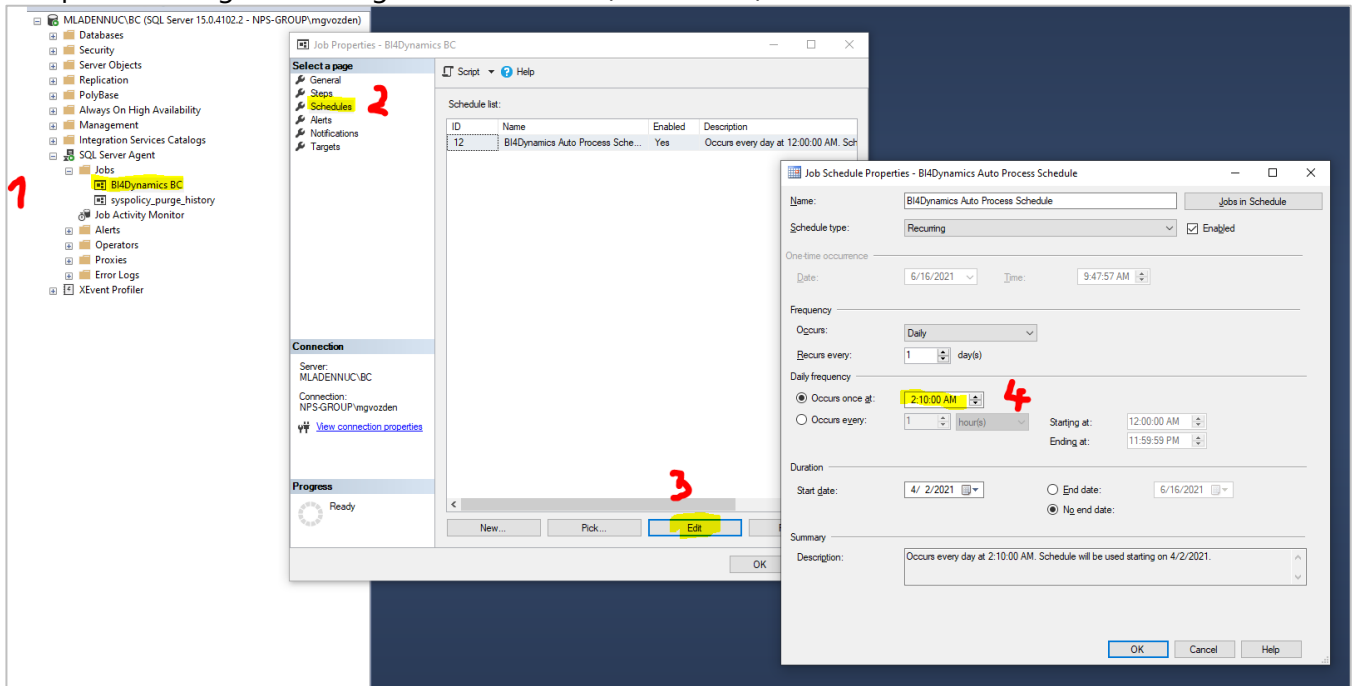


Note: make sure that user running service is a domain admin user (not a service) and has permissions needed to process data warehouse and analysis services. On VM this would be the VM admin user.



## 2.2 Setup SQL Server Agent

Setup the starting time for Agent few minutes (10 minutes) after VM start.



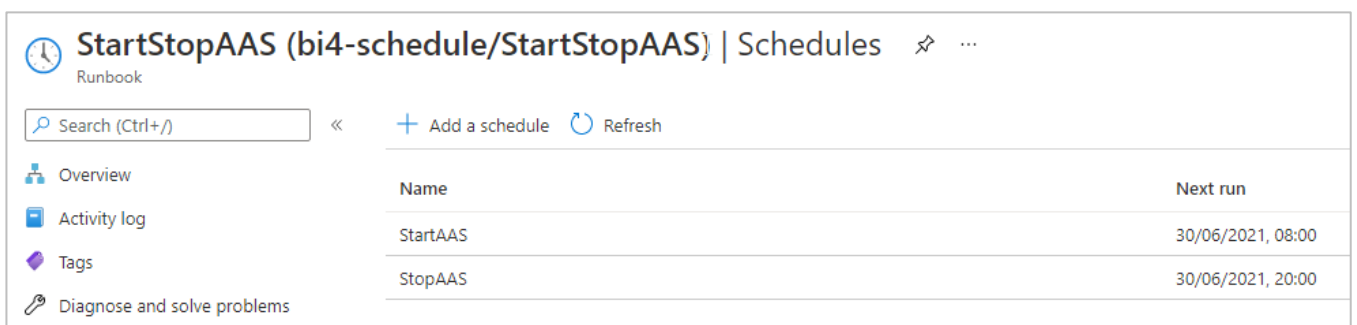
## 3 Process Automation #3 – Start and Stop Azure Analysis Services

Setup for process automation for Azure Analysis Services (AAS) can be found here:

<https://microsoft-bitools.blogspot.com/2019/12/schedule-start-stop-of-azure-analysis.html>

Authors **Joost van Rossum**, **Ricardo Schuurman** & **Mark de Groot** explain the process of automating schedule for Azure Analysis Services (AAS).

Note: There is no need to enter parameters into the script, as it gets the parameters from the schedules. We end up with two schedules, one to start and one to stop AAS.



StartStopAAS (bi4-schedule/StartStopAAS) | Schedules

Runbook

Search (Ctrl+/) << + Add a schedule Refresh

Name	Next run
StartAAS	30/06/2021, 08:00
StopAAS	30/06/2021, 20:00

## 4 Process Automation - Timing Schedule

Here is an example of processing schedule for daily update:

Step	Step description	Start Time	Duration	Comment
1	Start Container instance	22:00	45 min	BC export to data lake can run anytime after BC users are finishing their daily work.  This process time can vary 30% (!) day by day, exporting same amount of data, in the after-office hours when no-one is using BC.  Keep enough buffer time for next step.
2	Start Azure Analysis Services	07:00	2-3 min	Azure AS must be ready when DW processing start
3	Start SQL Server Agent	07:15	20 min	DW processing (data are in Azure AS)
4	Stop Azure Analysis Services	17:00		AAS will run during business hours when users are querying data.