Implementation Guide

Azure Solution Template

<SAP on Azure: Finance Data Pool>

Version History

Vers.	Type[1]	Reason for Creation / Changes	Author	Date
1.0	N	Initial Version	Jochen Jülke	19.04.2020

[1] Type of change: N = New, E = Extension, R = Revision, D = Deletion

Contents

1 Introduction

In this article, we will show you how to install, configure our Azure Template Solution [Finance Data Pool] which you can get in the AppSource store at Microsoft.

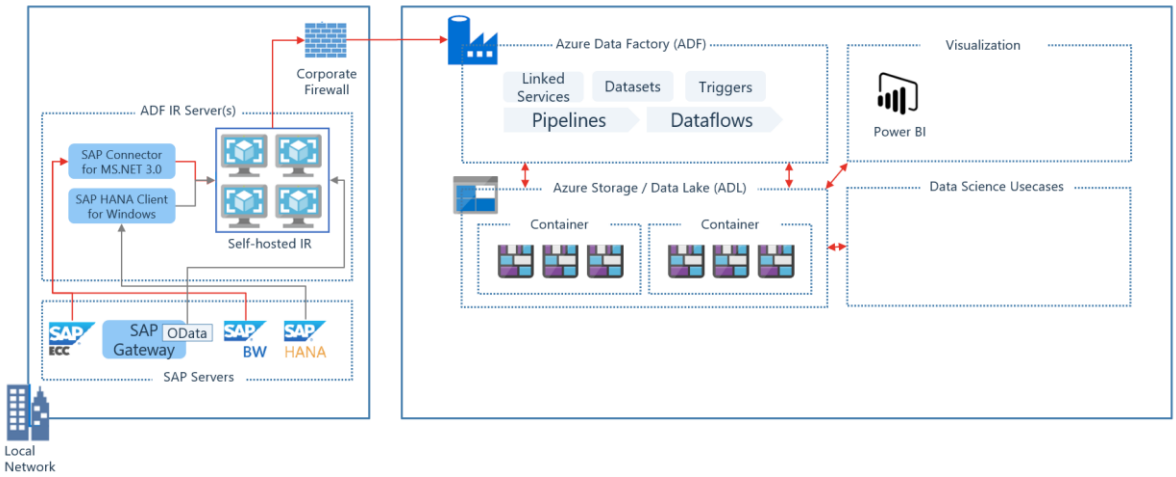


Figure 1 Solution Architecture

With the solution you can establish a secure data pool as a base for all your azure data science and reporting use cases with requirements on SAP Data.
All Data loads are done with Azure Datafactory (ADF) Pipelines. There ADF needs access to your onPrem SAP ECC Data, this is done by installing the ADF Integration Runtime (IR) on a server in your onPrem Network. After installation the IR opens an outbound TCP-Connection and connects through corporate firewalls with Azure ADF. Every Time a Schedule Trigger in ADF is executed the latest SAP data will be loaded from onPrem and stored in Azure Blob storage.This Blob storage data can then be accessed directly through reporting tools like Power BI or used as input for advanced analytics / data science use cases

1.1 Prerequisites

This app has following prerequisites for usage with your own data:

1. Azure Subscription for deployment
2. SAP ECC System, SAP User Credential
3. (onPrem) Server to install the needed Gateway (ADF Integration Runtime)

1.1.1 Azure Subscription

You need a azure subscription available with at least Contributor Permissions:

- Create a resource group
- Create needed resources through the automated deployment
    - Azure Storage
    - Azure Data Factory
    - Azure Network

1.1.2 SAP ECC System, SAP User Credential

Supported Versions:
SAP ECC version 7.01 and above, on-prem or in the cloud (e.g. SAP on Azure)
S/4 HANA is also supported, choose the corresponding Azure App Plan (see 1.2 Available Solution Plans)

SAP-User/Serviceaccount:
You need a SAP user who's being used in ADF must have the following permissions:

- Authorization for using Remote Function Call (RFC) destinations.
- Permissions to the Execute activity of the S_SDSAUTH authorization object.

We recommend using a dedicated SAP User and setting password policy in SAP for this user to: Pasword doesn't expire.

1.1.3 Server / Installation of ADF Integration Runtime

To use this SAP table connector, you need to set up a self-hosted integration runtime (version 3.17 or later). The server where you install the IR must have network connectivity to SAP and Azure! For more information, see Create and configure a self-hosted integration runtime.

The Server Requirements for this IR Server are as following:

- **HW/VM Sizing:** The recommended configuration for the Integration Runtime (Self-hosted) machine is 2 GHz, 4 Core CPU, 8 GB Memory and 80 GB disk.
- **Operating System**: Windows Server 2019, Windows Server 2016, Windows 10, Windows 7 Service Pack 1, Windows Server 2012 R2, Windows Server 2008 R2 SP1, Windows Server 2012, Windows 8.1

- Microsoft Integration Runtime (Self-hosted) requires a 64-bit Operating System with .NET Framework 4.6.2 or above.

If SAP ECC is your source:

- Download the 64-bit SAP Connector for Microsoft .NET 3.0 from SAP's website, and install it on the self-hosted integration runtime machine. During installation, make sure you select the **Install Assemblies to GAC** option in the **Optional setup steps** window.

If S/4 HANA is your source:

- Install the SAP HANA ODBC driver on the Integration Runtime machine. You can download the SAP HANA ODBC driver from the SAP Software Download Center. Search with the keyword **SAP HANA CLIENT for Windows**.

1.2 Available Solution Plans

If you buy the solution in azure marketplace to can choose from one of following plans:

Plan	Type	Description
Basic	Solution Template	Use this if SAP ECC is your source. The Basic plan is only for demo-scenarios and showcases how to load one Table (BSEG)
Standard	Managed Solution	Coming soon
Standard	Managed Solution	Coming soon
Premium	Managed Solution	Coming soon
Ultimate	Managed Solution	Coming soon

Figure 2 App Plans

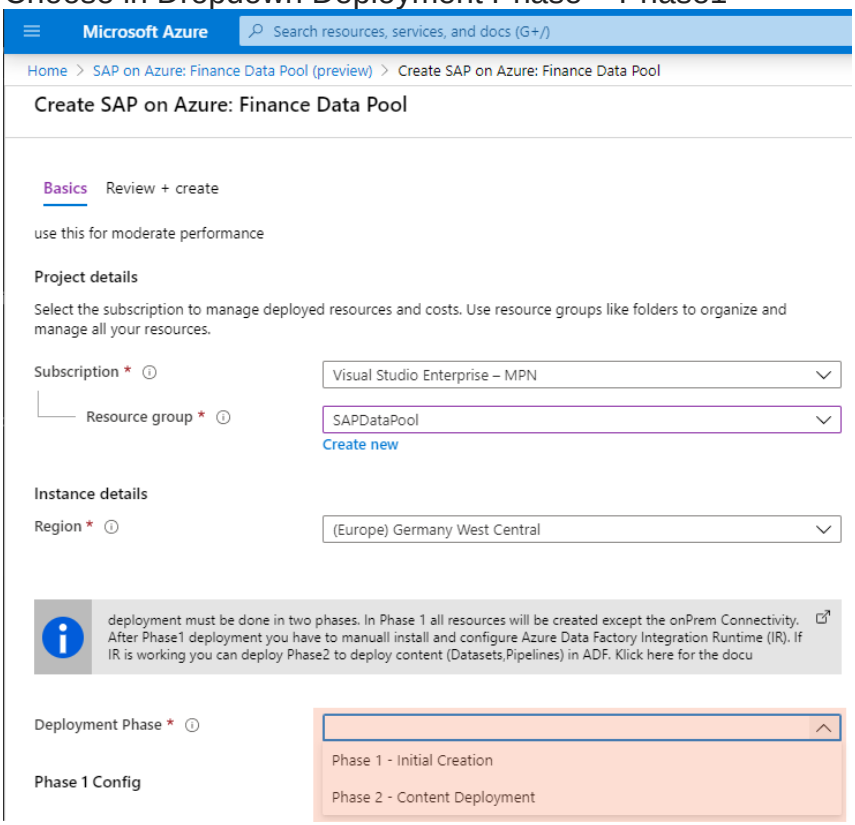
1.3 How to configure and Install the App

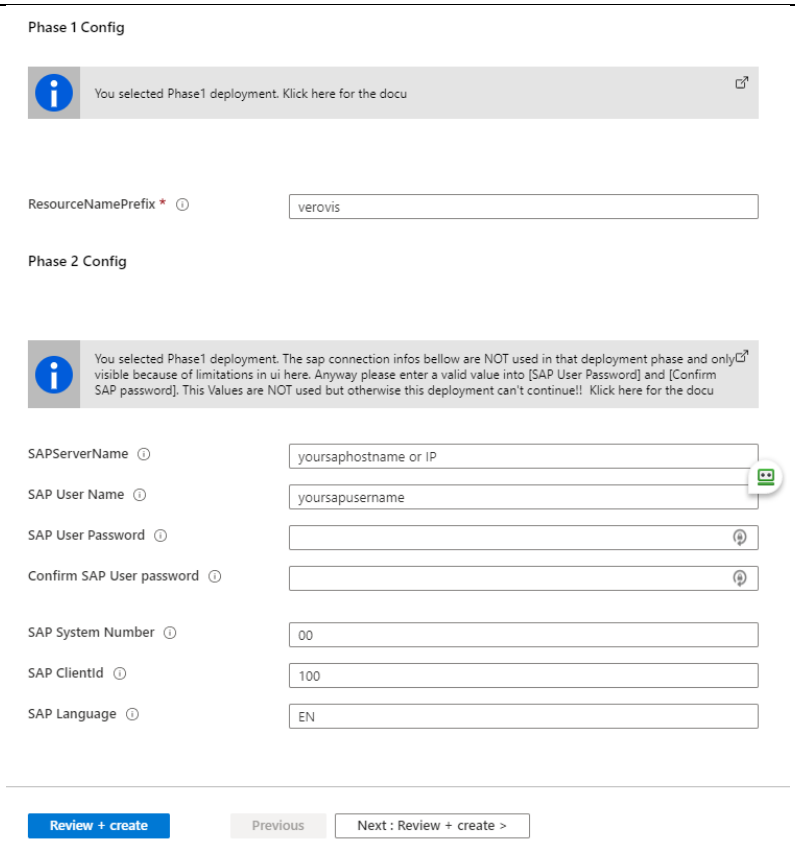
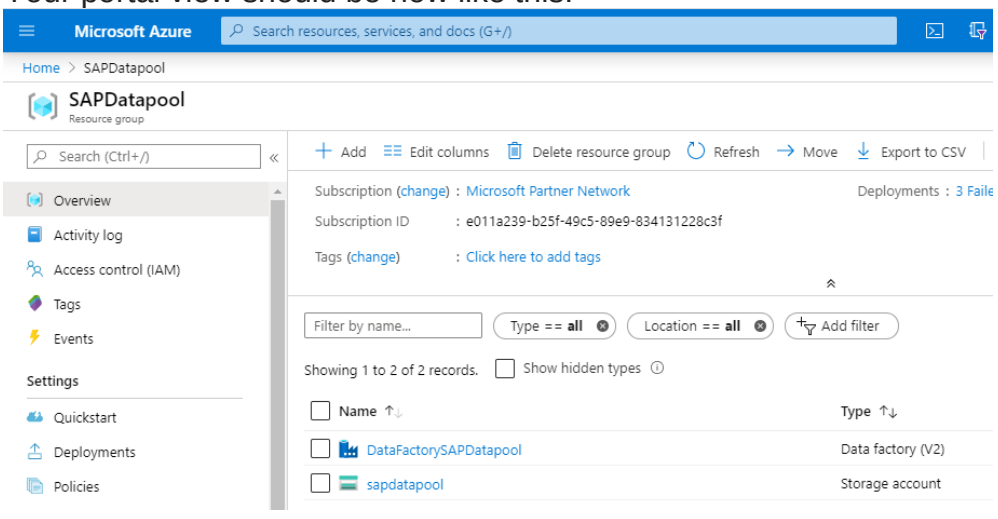
For technical reasons the App must be deployed in two Phases.

Phase 1- Initial Creation
In Phase 1 all resources will be created in azure. After that you have to manually install and connect the ADF Integration Runtime (IR).

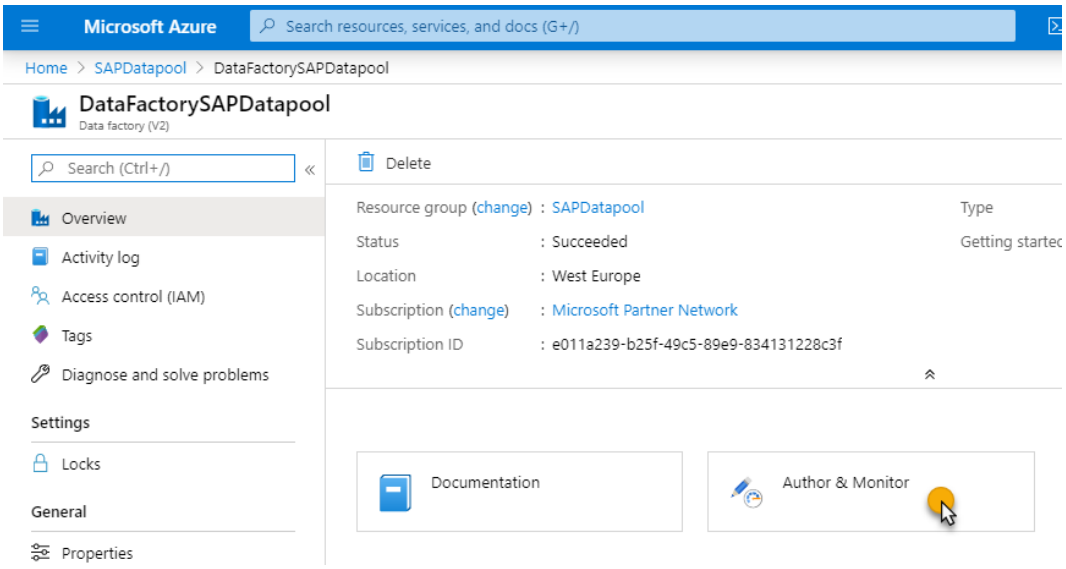
Phase 2 – Content Deployment
After you have successfully configured the IR you can run the second deployment phase which will create the SAP Connection with your provided User-Credentials.

Installation Step-by-Step:

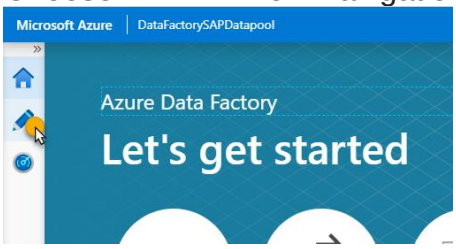
Step	Description
1	Logon via Remote Desktop to the server where you want to install the ADF Integration Runtime.
2	Open via web browser the App Page in Azure Market Place and choose “get it now”.
3	Choose in Dropdown Deployment Phase = Phase1 
4	Enter now the needed form inputs

	
5	Click “Review + create” and Start the deployment
6	After Successful deployment klick “go to resource” Your portal view should be now like this: 
7	Open Azure Data Factory Resource(DataFactorySAPDatappol).

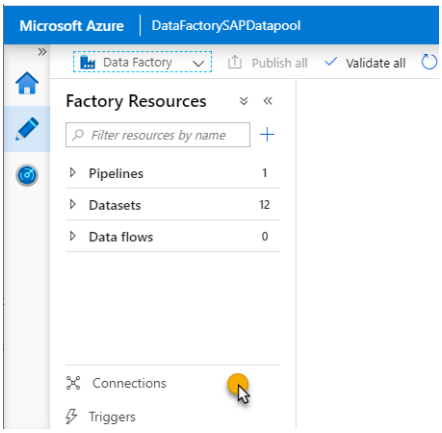
Choose “Author & Monitor”



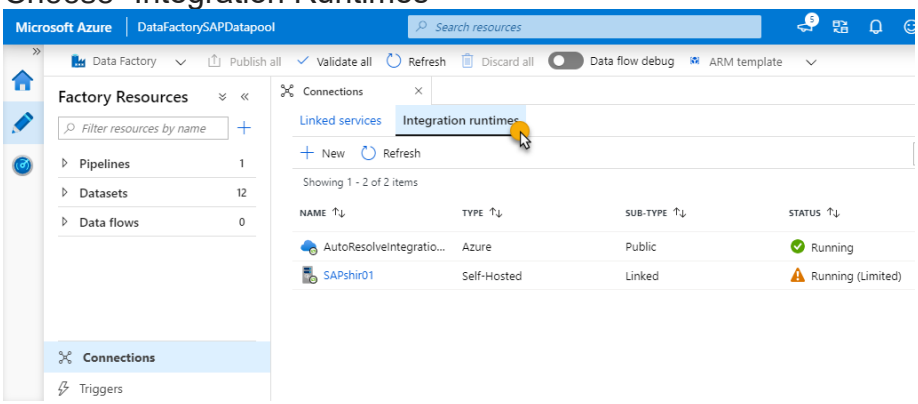
Choose “Author” from navigation:



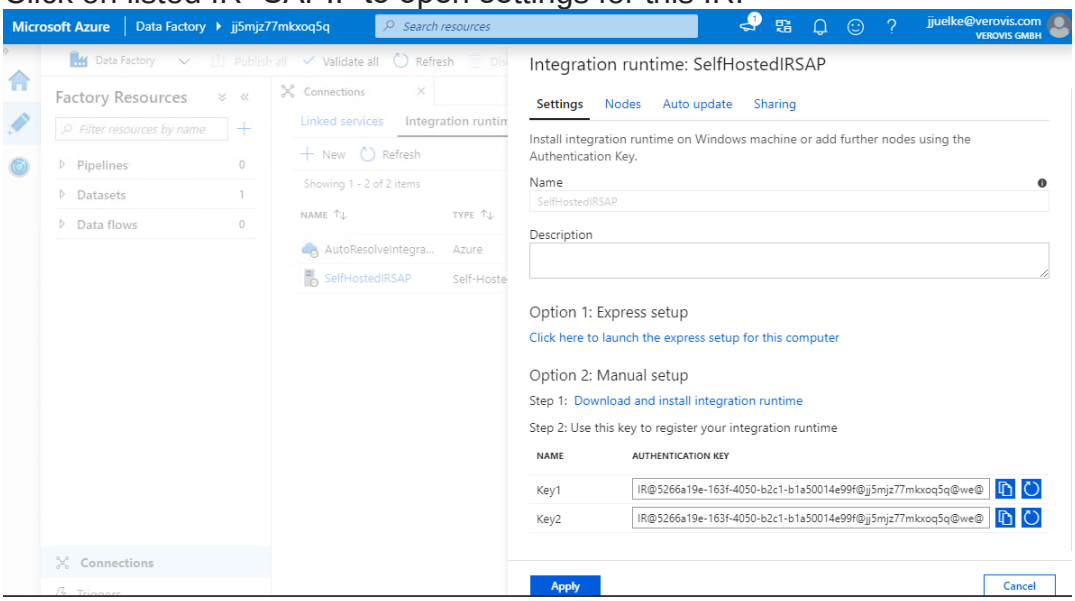
Choose “Connections”



Choose “Integration Runtimes”

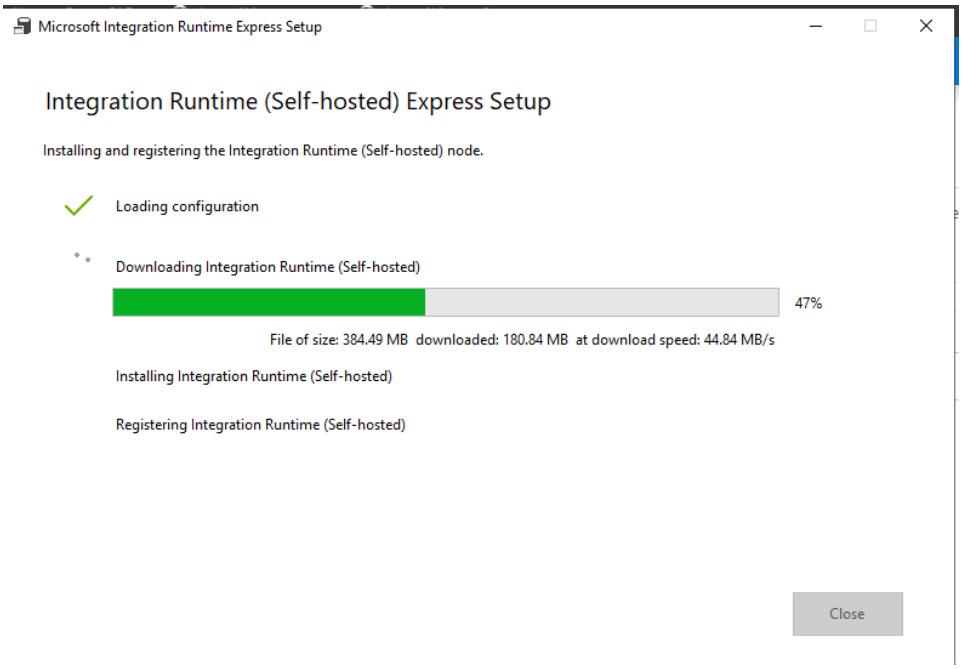


Click on listed IR “SAP..” to open settings for this IR:

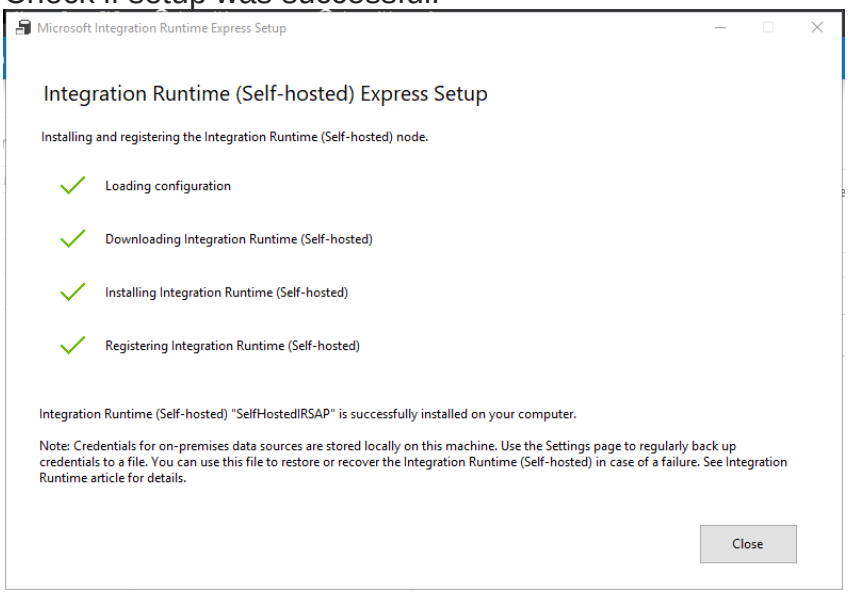


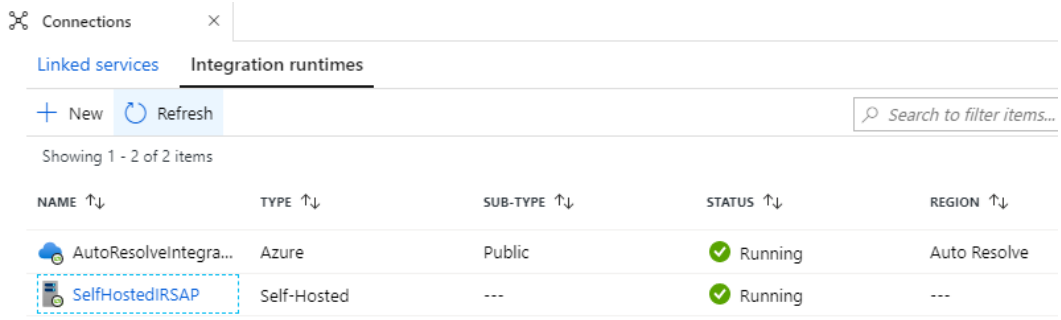
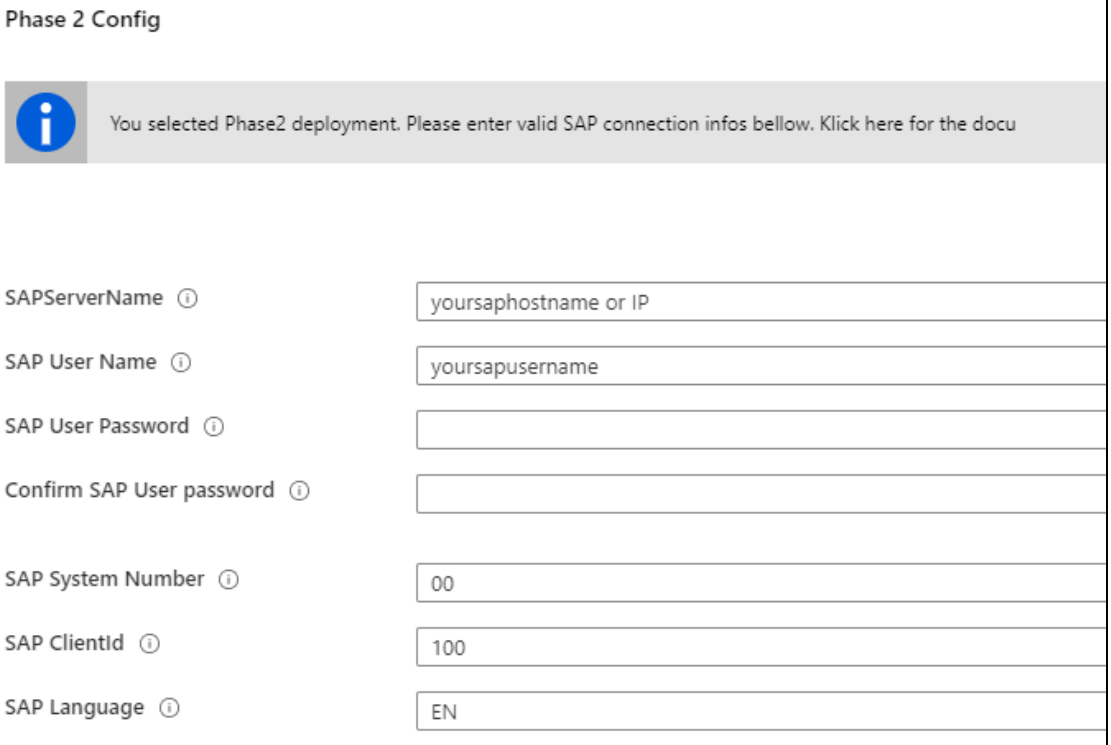
Recommendation: Choose “Option 1: Express Setup”

Install the IR on the Server:



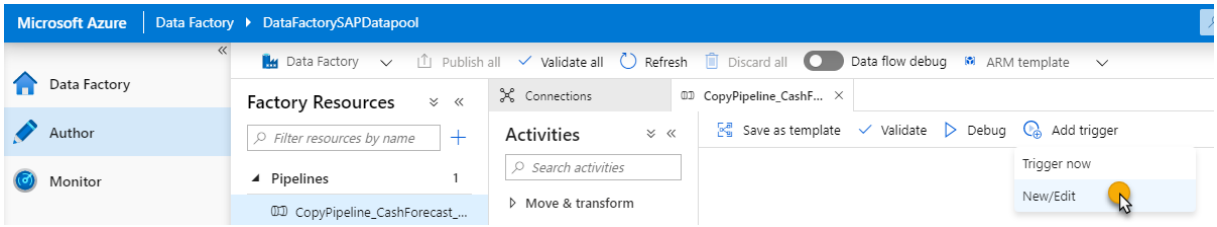
Check if setup was successful:



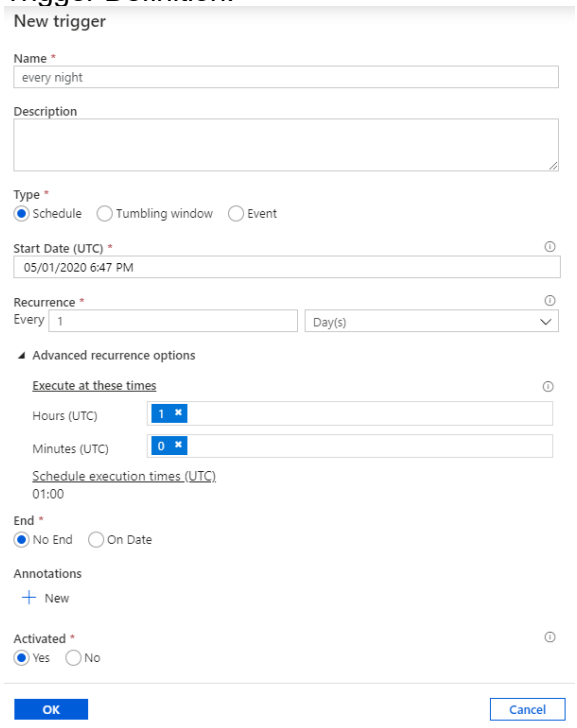
	Go now back to azure portal, refresh page, and check if IR Status is now online: 
	Deployment Phase 2
2	Open again via web browser the App Page in Azure Market Place and choose again “get it now”.
3	Choose now Dropdown Deployment Phase = Phase2 Enter the needed Input for Phase 2:  ➔ Deploy the solution the second time

1.4 How to use the App

After successfull deployment you can create scheduled triggers in ADF to execute the desired pipeline(s):



Trigger Definition:



2 Appendix

2.1 SAP Tables Reference

Following tables are currently implemented in the solution and can be loaded:

SAP Object	Description
KNA1	Description: General Data in Customer Master Filtering: ERDAT, UPDAT needed Fields (at least): MANDT, NAME1, COUNC, LAND1, SPRAS, LIFNR, STKZN, ADRN
BSEG	Description: Accounting Document Segment Filtering: GJAHR, BUKRS needed Fields (at least): MANDT, BUKRS, BELNR, GJAHR, BUZEI, BUZID, AUGDT, AUGCP, AUGBL, BSCHL, KOART, UMSKZ, UMSKS, ZUMSK, SHKZG, DMBTR, WRBTR, KZBTR, SGTXT, LIFNR, ZFBDT, ZTERM, ZBD1T, ZBD2T, ZBD3T, ZBD1P, ZBD2P, SKFBT, SKNTO, ZLSCH, ZLSPR, EBELN, EBELP
BKPF	Belegkopf für Buchhaltung Filterung: Zeitraumbezogen über CPUDT Über den Buchungskreis BUKRS Benötigte Felder: MANDT, BUKRS, BELNR, GJAHR, BLART, BLDAT, BUDAT, MONAT, CPUDT, CPUTM, AEDAT, UPDDT, USNAM, STBLG, STJAH, BKTXT, WAERS, KURSF, AWTYP, AWKEY, HWAER
LFA1	Lieferantenstamm (Lookup für LIFNR) Felder: MANDT, LIFNR, LAND1, NAME1, ORT01, ERNAM
FLQITEMBS	

2.2 ADF SAP Table Connector

SAP Table Connector – Supported Capabilities

Suitable scenario: ingest data from SAP Table for SAP ECC, S/4 HANA, BW, or other application in Business Suite.

Supported versions	• SAP ECC, BW, or other applications version 7.01 and above, on-prem or in the cloud e.g. on Azure • S/4 HANA
Supported server type	• Connect to Application Server or Message Server
Supported SAP objects	• SAP Transparent Table, Pooled Table, Cluster Table and View
Supported authentications	• Basic – username & password • SNC (Secure Network Communications)
Performance	• Built-in parallel loading option based on configurable data partitioning
Mechanism and prerequisites	• Built on top of SAP .NET Connector 3.0, pull data via NetWeaver RFC • Run on Self-hosted Integration Runtime

SAP Table Connector – How It Works