Open Edu Analytics Implementation Guide

Published: November, 2020

[Introduction 1](#_Toc57564053)

[1) Setup Data Share in School Data Sync 1](#_Toc57564054)

[2) Setup Resources in Azure Portal 2](#_Toc57564055)

[3) Setup Azure Data Share 4](#_Toc57564056)

[4) Setup Synapse 6](#_Toc57564057)

[4) Setup Power BI 8](#_Toc57564058)

­­

|  |
| --- |
| Introduction |
| This document provides technical details on the step by step setup of the Open Edu Analytics solution.  Open Edu Analytics is an open source modern data warehouse solution for education, built on Synapse Analytics and supporting Azure platform services.  For a review of the solution itself, refer to the document Education Analytics Summary.  All scripts and documentation for the Open Edu Analytics solution can be found at: <https://github.com/microsoft/OpenEduAnalytics>  The following are required prior to implementing the steps in this guide:   * Integration with [School Data Sync](https://sds.microsoft.com/) * Onboarding into the Education Analytics Azure Data Share TAP program * An [Azure](https://azure.microsoft.com) subscription |

# 1) Setup Data Share in School Data Sync

1.1) Click on Data Share in School Data Sync settings page

In order to begin receiving usage data from M365, the first step is to initiate the Data Share feature within School Data Sync. If the Data Share – Preview section is not visible in your account, check with your account manager to have the feature enabled for your tenant.

A screenshot of a computer screen

Description automatically generated

1.2) Click on “Manage data share”, then select the tenant admin who is doing the setup, and click “Send Invitation”

A screenshot of a social media post

Description automatically generated

# 2) Setup Resources in Azure Portal

In this section you will use a script to provision the Azure resources that comprise the core of this solution.

2.1) In Azure portal, click on the Cloud Shell icon, then select “Bash”.

Graphical user interface, text, application, PowerPoint

Description automatically generated

2.2) Click on “Create storage”

Graphical user interface, text, application

Description automatically generated

2.3) At the bash shell prompt, enter the following commands:  
cd clouddrive

git clone https://github.com/microsoft/OpenEduAnalytics

A screenshot of a computer screen

Description automatically generated

2.4) Edit the build script in OpenEduAnalytics/core/setup/oea\_build.sh by changing the settings for:

- “orgId” to be a value that represents your organization (this is a string that is used as a suffix in the naming of certain resources that require a globally unique id)

- “location” to be an appropriate Azure data center location

You can make this edit by using the built-in editor (click on the “Open Editor” icon), then navigate to OpenEduAnalytics/core/setup/oea\_build.sh

Text

Description automatically generated

2.5) Make the script executable, then execute it (use the following commands):

cd ./OpenEduAnalytics/core/setup

chmod +x oea\_build.sh

./oea\_build.sh

This will take a few minutes to complete, and will result in the provisioning of the following Azure resources:

* EduAnalytics resource group
* storage account with 3 storage containers (named stage1, stage2, and stage3)
* Azure Synapse workspace

# 3) Setup Azure Data Share

3.1) In Azure portal, search for “Data Share Invitations” then click on the link to arrive at the Data Share Invitations page, and click on the invitation for EducationDataShare.

A screenshot of a social media post

Description automatically generated

2.5) For “Resource group”, select “EduAnalytics” for the resource group.  
For “Data share account”, click “Create new”, type “DataShare” for the name of the data share account and click “Create”.

A screenshot of a cell phone

Description automatically generatedThen click on “Accept and Configure”

A screenshot of a cell phone

Description automatically generated

2.6) Go to the DataShare resource created in the last step, click on “View received shares”, then click on the EducationDataShare link, then click on “Datasets”, then click on “Map to target”

A screenshot of a cell phone

Description automatically generated

2.7) Select the resource group and storage account created earlier and enter “stage1/m365” for Path (this container is for the purpose of receiving usage data from M365), then click “Map to target” button.

Graphical user interface, text, application

Description automatically generated

# 4) Setup Synapse

3.1) Open Synapse Studio by navigating to the Synapse resource in Azure portal, and clicking on the “Open” link:

Graphical user interface, text, application, email

Description automatically generated

3.2) Create an Apache Spark pool

3.2.1) Click on “Manage”, then click on “Apache Spark pools”, then on “New”  
3.2.2) Enter “spark1” as the Apache spark pool name and click on “Review + create”, then click on “Create”

Graphical user interface, text, application, email

Description automatically generated

3.3) Import m365 Notebook

Click on “Develop”, then click on the “+” icon, and select “Import”, then select m365.ipynb from your local file system.Graphical user interface, text, application

Description automatically generated

3.4) Ingest m365 data into stage 2 and stage 3 data lakes

3.4.1) Click on “Develop”, then click on m365 to open the notebook

3.4.2) Select “spark1” in the “Attach to” dropdown and select “PySpark (Python)” in the Language dropdown.

3.4.3) Click on the play icon under the heading “Cell 2” to execute the contents of the script in Cell 2.

This will take several minutes to complete because of the spark session startup time.

Graphical user interface, text, application

Description automatically generated

3.4.4) Click on the play icon for Cell 3 and wait for it to complete.

3.4.5) Click on the play icon for Cell 4 and wait for it to complete.

3.4.6) Click on the play icon for Cell 5 and wait for it to complete.

3.4.7) Click on the play icon for Cell 6 and wait for it to complete.

# 4) Setup Power BI

In order to setup Power BI for use within Azure Synapse Analytics, you must already have a Power BI account, and a Power BI workspace created within that account.

4.1) From within Synapse studio, click on “Manage”, click on “Linked services”, click on “New”, click on “Connect to Power BI”

A screenshot of a cell phone

Description automatically generated

4.2) Enter a name and select the workspace from your Power BI account, then click “Create”

A screenshot of a computer

Description automatically generated

4.3) Create a PowerBI Report

4.3.1) Open Power BI Desktop, select “Get data”

Graphical user interface, application, Word

Description automatically generated

4.3.2) Select “Azure SQL database”.

Graphical user interface, text, application

Description automatically generated

*This is a preliminary document and may be changed substantially prior to final commercial release of the software described herein.*

*The information contained in this document represents the current view of Microsoft Corporation on the issues discussed as of the date of publication. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information presented after the date of publication.*

*This white paper is for informational purposes only. Microsoft makes no warranties, express or implied, in this document.*

*Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in, or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Microsoft Corporation.*

*Microsoft may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Microsoft, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.*

*© 2020 Microsoft Corporation. All rights reserved*